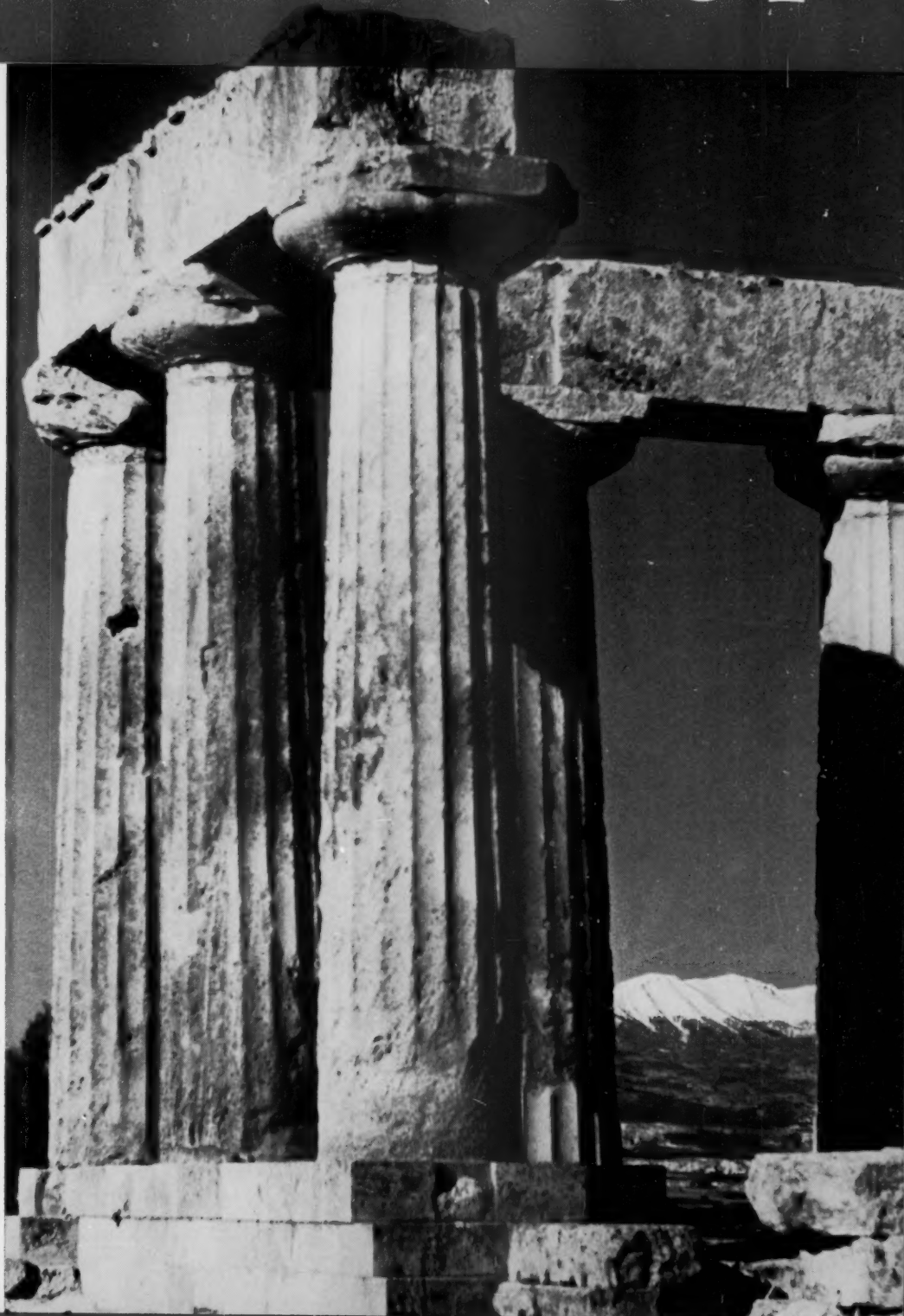


ARCHAEOLOGY



Winter 1951

VOLUME 4 NUMBER 4

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A MAGAZINE DEALING WITH THE ANTIQUITY OF THE WORLD

VOLUME 4, NUMBER 4 (16)

DECEMBER, 1951

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Winter 1951

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ARCHAEOLOGY is published quarterly, in March, June, September, and December, by the ARCHAEOLOGICAL INSTITUTE OF AMERICA, Andover Hall, Cambridge 38, Massachusetts.

Subscription, \$5.00 per volume in the United States. Foreign postage, \$0.50 additional. Single numbers, \$1.25.

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Printed by The Vermont Printing Company, Brattleboro, Vermont.

A NEW COPY OF A FORGED CELTIBERIAN PLATE

By Sterling Dow

ONE OF THE UNREAD—INDEED, ALMOST UNKNOWN—languages of the past is the Celtiberian spoken in the Spanish peninsula prior to the Roman conquest and the victory of Latin. All or virtually all that is preserved of this language is printed in one volume, EMIL HUEBNER's *Monumenta Linguae Ibericae*. This volume contains some scores of inscriptions, none really long, most only a word or two, and, apart from names, unintelligible. Under these circumstances, even a counterfeit, especially if it is long and elaborate, may have considerable value. The forger may have copied all or parts of a real Celtiberian inscription.

I. The PATERA SEGOVINENSIS and the PATERA SANDWICHENSIS

The most conspicuous piece in HUEBNER's *Monumenta*, and the one with the next-to-longest text,¹ is his No. XXXIV, the *Patera Segovinensis*.² The photo-



Fig. 1. The Patera Segovinensis. (From a photostat of Huebner, *Monumenta*, p. 167.)

graph on the first page of HUEBNER's publication is here reproduced (FIGURE 1).

The *Patera Segovinensis* was first published by an expert on Spanish numismatics, ALOIS HEISS of Paris (born 1820) in the *Gazette Archéologique* 13 (1888) 312-320 and plate 40; summarized by A. MARQUAND in *AMERICAN JOURNAL OF ARCHAEOLOGY* 5 (1889) 250. HEISS reported that the plate had been found by an "inhabitant of Segovia" while "spading his garden" early in 1888. Later in the same year, says HEISS, the plate had been purchased by one STANISLAS BARON of Paris. Still later in 1888, in Paris, at BARON's request, HEISS studied it and completed his article so rapidly—indeed hurriedly, as we shall see—that it was published in the above-mentioned journal for that very year.

Perhaps because the study by HEISS seemed to exhaust the evidence, five years passed without any significant comment. Then, in 1893, HUEBNER published his *Monumenta*. He made no effort (at least, he mentions none) to see the original. "Servat Parisiis Stanislaus Baron" is his only comment on its location. He was content to copy the very faulty transcription and to reproduce the inadequate photograph of HEISS. No subsequent history of the Segovia Plate itself is known.

About 1931 or 1932, the proprietor of a second-hand furniture store in Sandwich, Massachusetts, a store which contained also antiques and curiosities, died, and for two or three years the store was closed pending settlement of the estate. In 1934 the store was re-opened under a new owner. Within a very few days after the re-opening of the store, it was visited by a collector named Dr. G. E. LEONTINE of Dorchester, Massachusetts, who during many years, in the course of medical visits, amassed various collections of objects and of historical documents (all of them unrelated to the subject of this paper). In the store at Sandwich, LEONTINE found the plate shown in FIGURE 2. A week after he first saw it, LEONTINE returned to Sandwich and for twenty-five dollars purchased the plate. Sensing that it was Mediterranean and of uncommon

interest, he soon returned again to the store at Sandwich and spent two or three days scouring the premises for records of the object but found none. Subsequently the store was moved and the building torn down.

LEONTINE fell ill in 1945, and before his death in that year he was concerned to see that the Peabody Museum of Harvard University acquired the plate, asking only its cost price to him. The present writer, himself no Celtiberian scholar, was invited by Professor CARLETON S. COON to examine the piece epigraphically. The identification with the Segovia Plate was made by the late Professor ALICE E. KOBER. The then Director of the Museum, Mr. DONALD SCOTT, doubted its genuineness. Professor RHYS CARPENTER of Bryn Mawr pronounced it a forgery on the basis chiefly of its decoration. About fifteen letters, however, to scholars in America and abroad produced no further evidence. Study of the text meantime raised perplexities, since as a whole the symbols did not conform to what would naturally be expected of either alphabetical characters or of ideograms. Some of those which could be read as letters yielded impossible four-letter sequences of consonants.

Moreover, the fact that no one had located a single similar piece of pottery from Spain seemed suspicious—except the Segovia Plate, which appeared to have been made from the very same molds. A careful analysis of the clay, by Miss ANNA O. SHEPARD, was inconclusive in the absence of comparative data from Spain; her report is preserved in the Peabody Museum Library for reference in case other dubious pieces of Spanish pottery come to light.

It was Miss ALICE FROTHINGHAM of the Hispanic Museum in New York City who presently pointed out a note published by A. ENGEL in *Revue Archéologique* 2 (1896) 226-228. ENGEL had travelled extensively in Spain, and he had assembled a series of forgeries all of which he ascribed to one hand. The Segovia

Plate was the most nearly plausible; the rest were palpable, not to say outrageous, fakes. The forger developed fertility in inventing written characters, and many of the (presumably later) forged characters are delightfully elaborate and fantastic. His worst error, as often with forgers, consisted in becoming exuberant, instead of sticking to the letters which he knew to be real, and to the more conservative of the shapes which he had invented for the Segovia Plate.

Apparently, therefore, four replicas of the Segovia



Fig. 2. The Patera Sandwichensis.

Photo: J. K. Ufford

Plate are now known:³

1. The *Patera Segovinensis*, bought by S. BARON in 1888, published by A. HEISS and by E. HUEBNER (FIGURE 1). Subsequent history unknown.
- 2, 3. The two replicas purchased by A. ENGEL along with other forgeries, in 1896 or earlier. Subsequent histories unknown.
4. The *Patera Sandwichensis*, bought by G. LEONTINE in 1934, published in the present article (FIG-

Neither can it be suggested that *any one* of the group, e.g. the Segovia Plate or the Sandwich Plate, is an original Celtiberian plate from which the others were made in modern times by mechanical reproduction, or that *all* of the group were made in modern

Since many symbols are faithful copies, the forger may have copied sequences of letters, perhaps whole words, from genuine inscriptions.⁵ A meticulously accurate text might have value, and in the second half of this study an effort is made to present such a text.⁶

Previous Texts. In his publication, HEISS thanked BARON for permission to examine the Segovia Plate "with the attention which it deserves." It is true that on the Segovia Plate the symbols numbered by me (FIGURE 4) 1-2, 14-20, 45-68, 91-95, and to some extent all of the symbols of the inner band, are badly rubbed. Nevertheless HEISS may be charged with that type of carelessness, almost universal in his day, which consists in hurrying to get a transcription made as soon as possible so that the real, i.e. paper, work can begin. It is very rare in epigraphy that an earlier text is not worth some consideration: HEISS' is not. His drawing contains dozens of errors. To give one example only, he failed to recognize the existence of any of the eighteen small symbols (or the yet smaller and really difficult interpuncts), which consequently have not, so far as I have noticed, been recognized in any Celtiberian inscription anterior to the discovery of the Sandwich Plate. Such small interpuncts are not infrequent in

Fig. 4. Text of the Patera Sandwichensis. Above, the outer band; below, the inner band.

Latin inscriptions; the forger may have got his idea of interpuncts from them.

Unfortunately, HUEBNER reproduced both drawing and photograph without sufficient study of the latter. In making his drawing of the inner band, HEISS had divided the letters into "lines," and had (not improperly) let the "lines" overlap. Thus he repeated his no. 16 as no. 18 (my 124) and his no. 15, halved, reappears as no. 17 (my 121); his no. 30 is given again, as the very next letter, no. 31 (my 142); and once more he overlaps his starting-point, repeating his no. 1 (my 101) as no. 33. HEISS remembered this feature of his drawing, and in his own text he avoided the repetitions. HUEBNER did not: his text gives all the repeated letters, and he chides HEISS for not recognizing the correct total. This negligence was unusual for HUEBNER. He makes a similar error for the beginning and ending of the outer band.

Description of the Patera Sandwichensis. The plate is almost perfectly circular, the diameters varying from 0.484 to 0.492 m. The outer inscribed band is 0.034-0.040 m. in width; the longer vertical lines of the taller letters in this band vary from 0.025 m. to 0.030 m.

The length of the inscription in the outer band may be given as follows: the line (whether actually drawn or not) which served as a base-line for the letters of the outer band measures close to 1.48 m. in length. This line is of course a circumference, taken fairly close inside the rim; the letters

have a small margin. A similar circumference for the



tops of the letters is close to 1.29 m. in length.

The inner inscribed band, measuring 0.055-0.060 m. in width, is half again as wide as the outer inscribed band; the tallest vertical strokes of the letters run to 0.035-0.042 m.; there is an even more comfortable margin for them, and they are carefully formed. The inscription in the inner band is at the bottom close to 0.72 m. long, at the top only ca. 0.47 m.

Text. The inscriptions are retrograde throughout. Following HEISS and HUEBNER, I have arbitrarily begun the numbering of letters at 6 o'clock, and have given every element that surely is, or could possibly be construed as, a separate symbol. Thus each large letter, each small letter, and each interpunct is numbered, so as to be specifically referred to. The numbering should not prejudice the question whether, for instance, 72 and 73 are one letter (I think they are meant to be), or again 74 and 75 (more doubtful: a compound symbol apparently; compound symbols, when referred to as one united whole, are printed with a slant, e.g., 74/75), or whether some of the smaller symbols were thought of by the forger as punctuation.

On this basis the numbering of symbols in the outer band runs from 1 to 95. Since totals are of little meaning, the inner band begins at 101, and runs to 143. This saves the awkwardness of HUEBNER's italicized letters, as in *a* 23, *b* 23 (where I have 23 and 123). The starting-point, however, is precisely that of HEISS.

Relation of Outer and Inner Bands. Out of a list of twenty-five symbols which occur on the plates more

than once, sixteen occur in both the outer and the inner bands. The remaining nine are confined to the outer band. Five of the compound symbols (i.e. simple symbols united by ligatures) occur only in the inner band. Apart from these five compound symbols, and apart from five small point-like symbols of uncertain relationships, all the symbols of the inner band, thirty-three, are found also in the outer band. At least one sequence (51-52, 119-120) is identical in both bands, and one of the very few elements clearly repeated in any two ligatures is identical in 7 and 102.

Ligatures. The symbols which are compounds, i.e. involve ligatures, are at most seventeen in number:

5(?), 7, 26(?), 28/29, 39/40, 58, 61(?), 65(?), 66(?), 68(?), 74/75, 77, 102, 108, 110(?), 112/113, 117/118(?). Of these, eight are certain; nine are uncertain. Of the whole seventeen, four (7, 28/29, 39/40, 112/113) can be analyzed into known components.

Conclusion. To judge from the general ignorance about so conspicuous an object as the *Patera Segovinensis*, Celtiberian studies—at least studies of the inscriptions, alphabet, and language—offer a considerable opportunity for scholarly research. One obvious task is to disinfest HUEBNER's version of the alphabet, removing those (I think, not numerous) shapes which he had admitted from the Segovia Plate. The larger task is a new collection of Celtiberian inscriptions, preceded by a search for additional texts throughout Spain, and abroad. One unpublished text, on a hand of bronze in the Cabinet des Médailles, Paris, is known to me.

¹ The longest is No. XXII, the *Lamina Castellanensis*, a lead (curse?) tablet found in a grave; about 20 letters longer.

² Pages 167-170; addendum, page 214; region, page 166.

³ Conceivably the Sandwich Plate could be one of those acquired by ENGEL, but the wrappings on the Sandwich Plate were very old and motley, suggesting rather that it had passed through humbler hands prior to any date for the likely dispersal of the Engel collection.

The Segovia and Sandwich Plates are certainly not identical. HEISS speaks of the Baron plate as being "recouvert d'un vernis noir," whereas the Sandwich Plate is covered with a glaze which is not black in any area larger than a thumb-print, but is rather, over almost the whole area, various shades of dirty brown. Further, in HEISS' photograph the letters from 5 to 6 o'clock, and from 12 to 1 o'clock, are obscure, as if from rubbing; whereas in the Sandwich Plate they are all clear. The central medallion of the Baron Plate seems unobscured, whereas in the Sandwich Plate it is heavily encrusted. There are differences also in preservation. Most notably, the HEISS photograph shows a crack at 9 o'clock running from the outer edge through the outer rim, and through the second rim. The Sandwich Plate is intact in this area. Similarly, a number of tool-marks in the floral band of

the Sandwich Plate, made before the glazing, and a few nicks in the outer edge of the Segovia Plate, find no duplication in the other plate.

⁴ Forgeries of Iberian inscriptions are known. HEISS, who was well acquainted with conditions, commented upon forgeries made in Spain of Spanish pottery, and rejected the notion in the present instance (pages 312-313). HUEBNER'S *Monumenta* has a section ("Falsae vel suspectae", pages 205-212) in which he collects all the forgeries known to him of Iberian inscriptions. There are 62: all are much shorter; none is a terracotta plate in any respect comparable; none is from Segovia. HUEBNER treated the Segovia Plate as genuine.

⁵ Such tests as I have been able to make, working without special knowledge, appear to reveal some quite impossible sequences of consonants. The outer band as a whole could hardly be a direct copy, even if all the shapes could be substantiated. The inner band has far more invention.

⁶ This is done with the kind permission of Dr. JOHN O. BREW, Director of the Peabody Museum. The author is grateful to him, and to the other scholars named *supra*; to Professor JOSHUA WHATMOUGH for particularly helpful advice; and to Mr. F. P. ORCHARD for technical assistance.

THE MORTUARY CAVES OF CALAVERAS COUNTY, CALIFORNIA

By William J. Wallace

Dr. Wallace, a native Californian, received his A.B. in anthropology from the University of California in 1937 and his Ph.D. in 1946. He has taught and carried out archaeological and ethnological research in that state. He is now Assistant Professor of Anthropology at the University of Southern California.

ALONG THE WESTERN SLOPES OF THE SIERRA Nevada foothills in Calaveras County, California, is a series of limestone caverns. These large natural cavities are in an active state of growth. Their walls and openings are being gradually enlarged by infiltrating water which dissolves and carries away the limestone, and dripstone is being formed at a steady rate. The caves are dark and damp with moisture constantly dripping from the ceiling and walls. In several of the caverns human skeletal material has been found in situations which indicate that they were used by

prehistoric Indians as tombs for the dead.

The most spectacular of these natural ossuaries is Moaning Cave, so-named because of the low, prolonged sound it formerly emitted. This was caused either by wind blowing into the shaft or by slight changes of temperature within. Since the construction of a new passage and a steel spiral staircase in 1922, the "moaning" has ceased. The cavern is located two miles south of the village of Vallecito, Calaveras County, California.

The original entrance to Moaning Cave is a nar-

The largest chamber in Miller Cave. In the dry season scattered human bones were found on the floor below the investigator.

Courtesy of Edward Danehy.

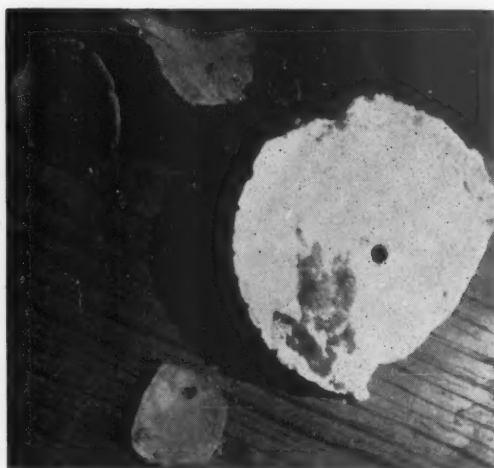




General view of Moaning Cave showing characteristic hill formation. The cave entrance is beyond the small structure on the left. Courtesy of Edward Danehy.

row, almost vertical, fissure descending thirty feet to a projecting ledge. From here there is a sheer drop of one hundred and fifty feet to the floor of the main chamber, a room fifty by eighty feet. The floor is covered by a deposit of red clay and angular rock, with a known depth of at least eleven feet, sealed in by an unbroken sheet of limestone. A vast quantity of dissociated human bones, some intact, many broken, representing persons of all ages, was found cemented in the limestone capping and scattered throughout the red soil below. The skeletal material was coated with stalagmite, and some of it had lost part of its organic content. Abalone (*Haliotis cracherodii*) shell ornaments and olive (*Oliv-*

vella biplicata) shell beads of several types were found with the skeletons. Small chunks of charcoal and a few animal bones also occurred in the deposit.



Abalone shell ornaments associated with human skeletal remains in Moaning Cave. The specimen in the upper center is cemented in limestone.

It is doubtful that the individuals whose remains were found in Moaning Cave were buried in the cavern. There is no evidence of graves having been dug into the red clay and the disarrangement of the bones and the depth of the cave argue against actual interment. Rather, it seems that corpses, ornamented with shell beads and pendants, were lowered or even carried down the steep entrance passage to the overhanging shelf of rock thirty feet below and from there toppled or thrown into the nocturnal darkness of the main chamber.

Scattered human bones bearing a thin calcareous encrustation were found in Mercer Cave, one mile north of the Mother Lode mining town of Murphys. Mercer Cave is large and complex, with many galleries which run for about one-fifth of a mile into the limestone formation. The skeletal remains were located in the first passage below the small entrance opening. The position of the bones again seemed to indicate that human bodies were tossed into the cave. Nearby were found the bones of an extinct ground sloth (*Megalonyx sierrensis*) covered with a deposit of stalagmite. From their situation it appeared that the animal had fallen into the cave and in the process of decay parts of its body had been strewn along the passage for a considerable distance. The remains of man are probably more recent than those of the sloth because they were nearer to the cave mouth and were covered with a much thinner layer of stalagmitic material. Stalagmite deposition, however, may be very uneven, and it is possible that the covering on the ground sloth was formed in an equal or shorter time than the thinner layer on the human bones. No artifacts were reported from Mercer Cave.

A number of human crania were removed from Cave of the Skulls two miles from Abbot's Ferry over eighty

Disarticulated human bones directly below entrance of natural cave ossuary. The position of the bones indicates that corpses were thrown into the cave.

Courtesy of University of California Press.

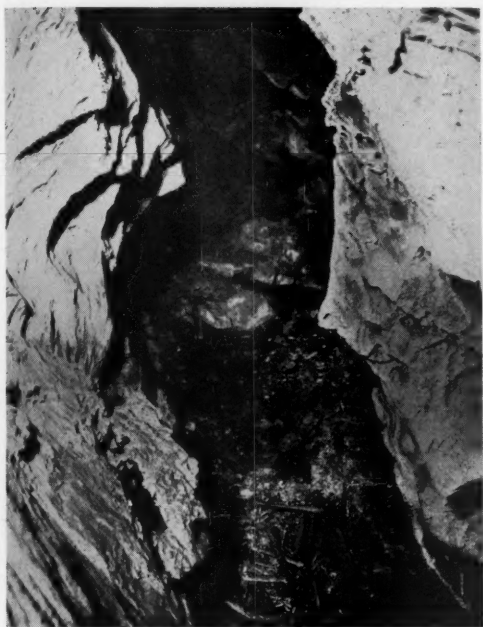


Fragmentary human skull encrusted with stalagmite, from Moaning Cave. The remains of hundreds of individuals are contained in this cavern.

years ago. The Cave of the Skulls consisted of a single room, twenty-seven feet deep at the mouth and thirty feet in diameter, with a clean stalagmite floor. Owing to mining operations or some other cause the cave was subsequently filled to a depth of about twenty feet with surface earth. The skulls were found lying on the surface of the floor and not buried in the deposit. Like the bones from Moaning and Mercer caverns, they were covered with limestone. Fragments of bows and arrows and bits of charcoal were recovered with the skulls.

A MILE SOUTH OF THE abandoned mining camp of Cave City is O'Neil (Skull) Cave, a limestone grotto which contained quantities of human skeletons. O'Neil Cave is a fifty-eight foot fissure descending vertically to lower passages and rooms. The depth to the lowest chamber is about ninety feet. The bottom of the shaft and adjoining galleries have been described as "choked" with human and animal bones. Some artifacts, including an olive shell bead and a "peculiarly made stone bowl" (mortar?) were removed. Bits of charcoal were also found.

Miller Cave, a narrow slanting crevice about one hundred feet long, located in a canyon not far from Cave City, was another repository for human remains. The floors of several passages were littered with osseous material and a more or less complete, though disarticulated, skeleton





"Indian burial pit" which drops vertically for about eighty feet, near Mercer Cave. Skeletal remains were recovered from here over fifty years ago and, reportedly, as recently as 1949. Courtesy of Edward Danehy.

idently not regarded as suitable.

The limestone grottoes were employed solely as collective sepulchers and not for dwellings. Camp refuse is lacking and there is nothing to suggest that the aborigines ever occupied them. The charcoal fragments found in some do not appear to be the residue of camp fires as they do not occur in concentrated lenses. They may represent the remnants of torch sticks carried by corpse-bearers to light their way in the dark entrance passages. When charred or extinguished these were thrown down the shaft. The animal bones are probably those of unfortunate creatures who fell into the vertical shafts and perished in the darkness. Actually the caverns were ill-suited for human residence. Added to the discomforts of perpetual darkness and excessive humidity were the difficulty and hazard of getting in and out. Whether the prehistoric Indians ever ventured to explore the lower depths is uncertain.

The human skeletal material from the Calaveras caverns does not seem to be of enormous antiquity. The bones are in no way primitive in their physical characteristics and

was observed lying in a pool of water at the bottom of the deepest gallery. Some of the bones were badly broken; none was encrusted with limestone, perhaps because this cave was somewhat drier than the others. No cultural objects were found in Miller Cave.

Human remains have been reported from other Calaveras County caves but the data are incomplete or vague. The use of limestone caverns for disposal of the dead was not limited to this county. Hawver Cave, two miles from Cool, Eldorado County, yielded many human bones as well as those of extinct animals. In Stone Man Cave, near Baird in Shasta County, was found a portion of a human skeleton embedded in stalagmite. Not all available caverns were so utilized, however. Crystal Cave at Cave City, visited by miners as early as 1850, so far as is known has given up no skeletons of man. Caves with vertical or steeply slanting shafts seem to have been preferred as vaults, perhaps because corpses thrown into them were not likely to be disturbed by humans or carnivores. Crystal Cave, easily entered by a gently sloping passage, was ev-

North wall of the Gothic Chamber, Mercer Cave. Human bones were found along the base of this wall and in the bank of earth at the left which slopes down from the entrance.

Courtesy of Edward Danehy.





General view of O'Neil (Skull) Cave. The entrance is on the knoll behind the clump of bushes at the left. Courtesy of Edward Danehy.

have no peculiarities which distinguish them from those of recent California Indians. The calcareous encrustation on the surface of many is no criterion of antiquity. Under favorable conditions such as exist in active limestone caves deposition can take place in a relatively short time. It is difficult on the basis of present archaeological and geological knowledge to fix the age of the remains but a clue to their temporal position comes from Moaning Cave. Here the shell beads and ornaments unearthed with the skeletons in the upper six feet of the deposit are predominantly types which also occur in the Middle Horizon of the Sacramento Valley, a cultural period estimated to have begun about 1500 B. C. and terminated around 500 A. D. It is likely that the remains from the other Calaveras caves are contemporaneous with those of Moaning Cave. More precise dating by radioactive carbon (C^{14}) may be possible and samples of charcoal were collected from the deposit in Moaning Cave for this purpose.

NONE OF THE CAVERNS seems to have been used for entombment in historically recent times. The Sierra Miwok, inhabitants of the foothills at the time of first European contact, cremated or, more

rarely, buried their dead in rock-covered graves. These Indians greatly fear the subterranean chambers because, according to their mythology, they are frequented by Chehalumche, a stone giant, who sallies forth each night in search of human prey to be dragged underground and devoured. The thought of throwing a fellow tribesman's body into a cave to be eaten by this monster is repellent to the contemporary Indians, and they look with horror upon the suggestion that they or their ancestors might ever have put their dead in the caverns. The Miwok feel that the finding of human bones in the limestone grottoes is convincing proof of their occupancy by Chehalumche, the bones being those of his unlucky victims.

It thus appears that it was at one time the custom of the Indians in the foothills of Calaveras County to toss their dead into limestone caverns which served as ready-made and spacious vaults. Judging from the great numbers of human bodies which have accumulated in some, this mortuary practice must have persisted for many generations. It was abandoned, however, perhaps many centuries, before the historic period, and the recent Sierra Miwok Indians retain no memory or tradition of the custom.



Church of Santa Isabel. Eighteenth Century.

THE ARCHITECTURE OF COLONIAL ANTIGUA, GUATEMALA, 1543-1773

By Sidney David Markman

A native of New York, Dr. Markman took his A.B. at Union College in 1934, and his Ph.D., in Greek art and archaeology, at Columbia University in 1941. After four years at the University of Panama and two years in Guatemala, he returned in 1947 to teach at Duke University, Durham, North Carolina. His summers he continues to spend studying the arts and architecture of Central America.

WITH GOOD REASON HAS ANTIGUA BEEN called the Pompeii of America. It is one of the few cities of the Americas that preserves its colonial character unchanged by the growth common to other cities in the nineteenth and twentieth centuries. Plagued by constantly recurring earthquakes for more than two centuries, *Santiago de los Caballeros de Guatemala*, the official name of Antigua while colonial capital of Central America, was moved some twenty-five miles away in 1773. From a populous city of about 70,000 inhabitants Antigua changed to a small, somnolent provincial town. The abandonment of the old capital and the creation of the new fore-

shadowed the close of the colonial period and the beginning of national existence and independence from Spain early in the nineteenth century. The colonial or *la antigua*, the old, Guatemala thus remained static during the nineteenth and twentieth centuries. Recent developments affected only the independent or *la nueva*, the new, Guatemala.

In 1543 Antigua was established in its present location in the valley of Panchoy after having been moved twice since its first foundation in 1527. Here the capital of the Captaincy General of Guatemala was to remain until the ill-fated year of 1773. The military architect JUAN BAUTISTA ANTONELLI laid out the city plan. He

Church of Santa Cruz, Antigua, 1731.

This little church is located about one hundred yards west of the embankment of the Rio Pensativo at the foot of a steep hill. The neighborhood, now quite deserted, was formerly known by the native name of Chipilapa. Here was a populous community of Indian workmen who built their houses of *pisé de terre*, that is, tamped earth set in wooden forms. After each earthquake the earth walls fell thereby enriching the soil, so that today the whole area is occupied by a very productive coffee plantation.

The retablo-like façade is flanked by stunted towers, and rests on a stepped platform, or *lonja*. The *lonja* appears in most of the church architecture of Antigua. The atrium, with its cross now broken, has only recently been cleared of coffee trees.



Church of Santa Isabel. Eighteenth Century.

(At left.) Except for the façade very little of this church or *ermita* exists today. The front of Santa Isabel acts as the backdrop for the open area or atrium with its stone cross which is an integral part of the design. The façade itself is a sort of gigantic retablo before which an altar might be placed and mass celebrated in the open. The atrium serves as a setting for religious processions, as a meeting place for people of the neighborhood, and even as a market place on certain days of the week. The *espadaña*, arcaded belfry, is flanked by half pediments decorated with sirens in plasterwork relief. On both first and second stories highly stylized acanthus leaves arranged in pairs one over the other decorate the length of the pilasters.

did a splendid job of orientation to the delight of the inhabitants, but to the great chagrin of the photographer. Not once during the months of June, July, August, and part of September of 1950 was I able to get more than a few minutes of sun on the façade of the Ayuntamiento, and then only in the very early morning even though this building faces due south! All streets run north-south and east-west presenting a

typical Spanish-colonial gridiron plan. The city is surrounded by low mountains to north, east, and west. To the south, looming at the end of every street, is the perfect cone of the Volcán de Agua, now extinct, but ram-bunctious enough in the sixteenth century to have destroyed Ciudad Vieja. To the southwest rise two other volcanoes, quite alive and active even today, bearing the poetic names of Volcán de Fuego and Acate-nango.

The earthquakes which destroyed the city time and

Santa Cruz. Detail of façade decoration.

The high quality of the workmanship of the plasterwork decoration, *ataurique*, reveals a care and finish not expected of such a humble material. The architectural order employed is quite fanciful. The pilasters are built up of three colonnettes each with a single deep V-shaped flute. The colonnettes are separated by a sharp V-shaped arris. The architrave comprises a series of moldings of multi-linear profile. The frieze above is completely covered with a complex interlace design broken at intervals by the figure of a little nude boy, *putto*, with a sash thrown over his right shoulder, standing like an atlantid holding up the cornice.





Church of Santa Rosa de Lima, Antigua. After 1720.
Detail of upper part of central bay.

Of especial interest here is the intricate pilaster made up of units looking like column bases which have been squared. This type of pilaster appears also on the churches of El Calvario and of Santa Ana. The torus profiles of the friezes recall those on the church of Santa Cruz, even to the little figures like atlantids. The whole façade is punctuated by nine niches each with its statue. Directly over the door is a figure of the Virgin and Child standing in a deeply splayed window opening. The *espadaña*, is flanked by half pediments with a scroll-like outline. Like those of the church of Santa Isabel, the pediments are decorated with figures in relief.

time again are well known from contemporary accounts and provide the archaeologist and art historian with exact dates for establishing the chronology of the architecture. In the eighteenth century alone earthquakes occurred five times, in 1717, 1749, 1757, 1761, and the final and most destructive one in 1773. Although many of the existing buildings were erected in the sixteenth and seventeenth centuries, practically none preserve their original form. All have been altered by subsequent eighteenth-century remodelling, and in some few instances nineteenth-century restoration.

The architecture, especially with regard to the decoration, is most difficult to classify. The Antigüeño style is unique, having a character all its own in much the same way as do the styles of Mexico and Peru. Close analogies to it are to be found neither in the Americas nor in Spain. It is primarily an architecture of brick and plaster. The wooden roofs, *alfarjes* or *artesonados*, of the seventeenth century, and to some extent of the eighteenth, were changed to domical roof construction in the eighteenth century. The decoration, even the sculpture, is in brick and lime mortar. The church plans have, for the most part, a single nave. Since the majority were served by the regu-



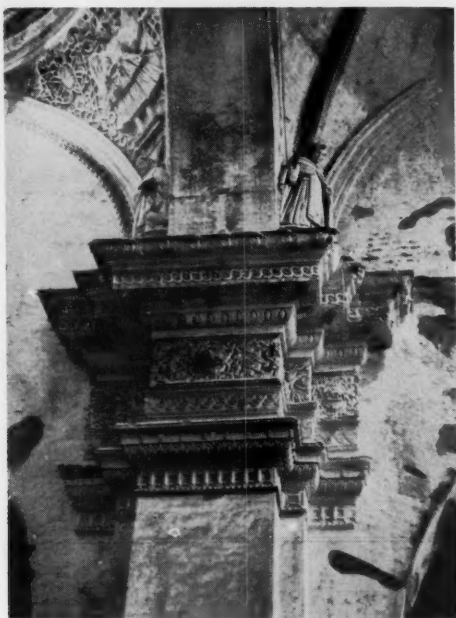
Church of La Candelaria. After 1718.
Detail of the façade.

The salomohic or twisted column is a feature of the architecture in Antigua during the late seventeenth and early eighteenth centuries. The method of construction, typically Antigüeño, consists of a core of brick laid up to make the rough outline of the column, which is then covered with a layer of lime mortar or plaster to give the final shape. The *ataurique* or plaster filigree ornament is applied over that.



Church of El Carmen, Antigua. Upper part of façade.

The present structure was completed in 1728 after the original church building had been destroyed in 1717. The *ataurique* decoration of heavy foliage is still intact on the upper tier of columns. The lower columns have been stripped almost bare. Of particular interest and typical of the Antigua style is the multilinear door header or arch, which begins at the top with a horizontal band and changes into a *cyma reversa* profile on either side to meet the jambs below. The figure of the Virgin, modelled in plaster on a core of brick, stands in the octagonal window over the door. The window is not a simple octagon; each side meets its neighbor with a little step while the diagonal sides are curved rather than straight.



Cathedral. 1680.

Detail of pier and arches showing pendentives of domes over nave.

In contrast to examples of the eighteenth century, the plaster decoration is rather reserved. The moldings even have typical classic profiles. Particularly interesting is the lowest molding which acts as a necking. It consists of a series of rectangular shapes, rounded in profile and on the corners, connected by a double chain. This ornament recalls the *toison de oro*, the Order of the Golden Fleece of Austria and Spain.



Monastery of San Francisco, Antigua. c. 1675. Portada to atrium.

As in Mexico the religious brotherhoods were responsible for the spiritual conquest of the Indian. The Franciscan order was one of the first to reach Central America. In 1673 this monastery housed about 90 monks who served as regular clergy in about 120 towns and villages comprising some 50,000 souls.

The *portada*, gateway, opens directly on the atrium of the church inside the monastery grounds. Note the papal coat of arms between the twisted columns in the bay to the left of the arch.

lar clergy, that is, the monastic orders, they are often connected directly with a monastic or conventual complex.

The builders of Antigua were always in a great hurry, forever being goaded by the necessity of rapidly providing a roof after each destructive movement of the earth. Walls are usually built of courses of rubble interspersed with others of brick. Painted stucco covers the rough walling material. Columns, arches, and vaults are of brick also covered with stucco. It is a vernacular style, a style of good craftsmen, not of formally trained architects. Except for the Cathedral it never achieves the monumental character of the ecclesiastical and civil architecture of Mexico or Peru.

Any interpretation of the architecture must take into account the many social and economic factors which characterize the colonial period in Latin America in general, and of the Captaincy General of Guatemala in particular. The riches of Guatemala lay in the Indians and the soil they tilled. Great mineral wealth, gold and silver, which one usually associates with the Spanish colonial empire, never played a big part in the history

of Guatemala. Rarely if ever does one find churches of stone with interiors literally sheathed with gold and silver as in Mexico, Ecuador, or Peru.

In Guatemala, as in the rest of Latin America, there were three basic components in the social and economic



Monastic church of San Francisco. Nave.

Like most of the churches of Antigua, it has a single nave and was roofed with a series of domes on pendentives. The present structure must date after the earthquake of 1717, for a document in the National Archives of Guatemala, dated 1673, records a contract for repairing the wooden roof, *arteson*, the timbers of which were very old and rotted.



Church of the Monastery of the Mercedarian Order.
La Merced.

The church stands on a single stepped platform, *lonja*, with merlons, *almenas*. In front is an open area or atrium with the usual stone cross dominating the space. It must have been put together from parts of two different crosses, as the base bears an inscription 1765 while the shaft is inscribed with the date 1688. The massive twin towers are very likely seventeenth century. The present structure, dedicated in 1764, replaced a church which was almost completely destroyed in 1717. The pilasters of the upper two stories of the towers are most complicated and completely free of any structural connection or restraint. The retablo-like central bay is eighteenth-century construction.



La Merced. 1764. Upper part of façade.

The decoration represents a culmination of the *ataurique* technique. The floral patterns are very delicately modeled and are excelled only by the work on the church of Santa Cruz. Note the nude dancing figures on the lower parts of the column shafts.

Church of the Convent of La Inmaculada Concepción de Nuestra Señora. After 1717.

Typical of most convent churches, one of the long sides, with the main door, is parallel to a street in order to provide access to lay worshippers. Opposite the street entry, in the other long wall is the door which provides access to the convent proper. The short sides of the plan are within the convent walls. Of particular note is the interior pilaster order with its entablature built up of a great variety of moldings. Volute brackets support a cornice with dentils.



conquest; and third, dominated both physically and spiritually, the Indian. *Padre* and *encomendero* were often at odds over the latter's treatment of the Indian. Never-



Convent of Santa Clara, Antigua. The cloister.

The church and convent were destroyed in 1717. The new buildings were still under construction in 1734 when a letter from the king in Spain arrived asking, "*si es Yglesia o convento que se fabrica, y si hay necesidad de erigirla de nuevo.*"

theless, the two were millstones between which the Indian was grist to be ground.

To dub the architectural style of Antigua as baroque would imply that it is imitative and wholly imported from Spain, via Mexico perhaps. This is only partially true. The general character of the baroque features went through a development quite independent of the baroque in Spain. To classify as *mudéjar* the plaster-

The debris of the earthquake of 1773 was cleared from the cloister one hundred and seventy years later, in 1943, on the four-hundredth anniversary of the founding of the city. The fountain is of contemporary construction. The original, of colored ceramic tile, is now in one of the patios of the Palace of the Captains General a few blocks away. A two-story *loggia*, arcade, encloses the cloister, a typical feature of all the convents and monasteries of Antigua.

Standing on the north side of the main plaza, the building presents a two-story arcade or *loggia* to the south. On the opposite side of the square and facing north is the Palace of Captains General with a similar arcaded façade. The *Ayuntamiento* is one of the few stone buildings in Antigua. Its arcade is wholly of stone. The wall facing the street is probably of stone veneer over a brick core, which is the case with the church of the Convent of Santa Clara. The light-colored mortar joints are actually false and are intended to make the wall appear to be laid up of regular courses of large blocks of stone. Smaller blocks or slabs of the veneer are laid in a darker mortar approximating the color of the stone.

Palacio del Ayuntamiento de la Muy Noble y Muy Leal Ciudad de Santiago de los Caballeros de Guatemala. 1743.



work decoration, the *ataurique*, and the simple construction of brick and lime mortar with wooden roofs and ceilings, *alfarjes* or *artesonados*, is misleading. One is not sure that *mudéjares* actually came to build, and this style, except in broadest outline, is not related to its Spanish prototype.

To go to the other extreme and see everything in the style as an expression, though at times oblique and in-

direct, of the Indian spirit is to obscure the fact that the Indian responsible for the style was now a Christian building churches and not a pagan building temples. In fine, any investigation of the architecture of Antigua must take into account the three components of the colonial social structure—the Spaniard, the Christian religion, and the Indian—for whatever resulted was due to the impact of the three on each other.

Ayuntamiento. Lower story of arcade.

The columns, as in the Escuela de Cristo, are rather squat and stubby. A sedate tuscan, the order is set on heavy square plinths. The arch soffits continue the fluting of the shafts below, and are even rounded off like half-columns. The vaults are the "vaida" type, the dome and the pendentives of one construction. This building suffered very little in the earthquake of 1773 and preserves its mid-eighteenth-century character.





Monastery of the San Felipe Neri y Escuela de Cristo.
Antigua. Upper story of cloister arcade.

From a document in the National Archives of Guatemala it appears that this building was still under construction in 1720. The piers are squat and stubby, a form quite common in the eighteenth century. When visualized in section, they present a most complicated outline. The design is based on a square elaborated so that the corners are indented and each side is broken by a shallow convex curve. The same geometric outline is frequently used for window openings and even for the pools or water basins of the many fountains of Antigua. The vaulting over each bay is carried out by means of *bóvedas valdas*, that is, the domes and supporting pendentives are really built as single units.

Pila de los Pescados. Detail.

The foreshortening is rather elementary. The general finish indicates an artist more used to working in plaster than in stone.



Rarely is there any need to shut off the water in the fountains of the public squares or even those in the patios of private houses. A never ending supply of water is always available from the many rivelets and streams running down the surrounding mountainsides.

Fountain near La Merced. Pila de los Pescados. Eighteenth century.



The stem and bowl were not originally part of this fountain, but were added after some gay young blades, out on the town one night, destroyed the group of Poseidon and his horses. The plan of the basin or pool is similar to a section of the arcade piers in the cloister of the Escuela de Cristo. Carved on the bowl above are a number of heads wearing the typical eighteenth-century peruke, each with a short piece of pipe in the mouth from which the water trickles into the pool. At each corner of the water basin, carved in relief, are mermaids holding hands, while on the curving portions, little *putti* flank unadorned escutcheons entwined with rope and ribbons.

THE ROMAN CITY OF MACTARIS

By Margaret A. Alexander

Illustrations from photographs by Robert L. Alexander by courtesy of the Department of Antiquities and Fine Arts of Tunisia and with the aid of a grant from the Colt Archaeological Institute of New York.

AS ONE JOURNEYS INTO CENTRAL TUNISIA, French civilization becomes less apparent. The traveler passes through small Arab villages and by broken monuments of this once rich Roman province. The overlay of cultures is presented almost symbolically in this view of modern Maktar (FIGURE 1)—at the entrance a Roman triumphal arch; beyond, the *Gendarmerie Nationale*, a reminder of the French Protectorate; rising above it, silhouetted against the Hammadas Mountains, the Arab minaret.

To the southeast lies the ancient city, now being excavated by M. GILBERT PICARD, Director of Antiquities and Fine Arts. Although most finds have at least been mentioned in scientific journals, I am particularly indebted to M. PICARD for his generous permission to illustrate and discuss some objects not yet published.

The importance of ancient Maktar can only be conjectured from its extensive ruins as no pagan writer mentions it. A French traveler in 1848 traced many streets lined with house foundations. In 1862 the French archaeologist GUÉRIN described the site as a number of isolated monuments in fields of grain, and it is much the same today. In addition to the buildings to be discussed below there were temples, large and small *thermae*, an amphitheater, a small market area, a *basilica et horrea* (so identified by an inscription), a fountain house. Maktar was on the trade route from Hadrumetum (Sousse) to Sicca Veneria (Le Kef). A

pedestal, dated 198-199 A.D., gives the name and rank—*Colonia Aelia Aurelia Mactaris*, a name derived from the Punic *Hammaktarim*. There was an active Christian community. Six bishops are recorded, from 256 to about 550, and there were at least four churches.

From cemeteries have come Neo-Punic, Libyan and Latin inscriptions. In one to the east is the crypt of a Neo-Punic temple, i.e., erected during the Roman Empire, probably in the third century, but for Punic rites. Only two Roman mausolea remain. One (FIGURE 2) marks the extremity of the southwest

cemetery. Its lower chamber is lined with columbaria or niches; the upper stage is a single vaulted niche. Such three-storied, pyramidal-topped mausolea are known elsewhere in North Africa, e.g., at Kasserine.

Although much battered, its decoration (FIGURE 3) still retains a crispness resulting from the deep incisions and drilling. It is almost identical with that on the arch in the village. Both monuments probably date from the third century.

The frieze over the door is richly carved with flower-filled *rincaux* (FIGURE 4). Above are the vague forms of a relief depicting the sacrifice of a bull.

A second mausoleum, for the family of the Julii, stands on the other side of the city (FIGURE 5). Above its sacrificial relief is a lengthy inscription to the various deceased. Like the other mausoleum, its entrance is barred, undoubtedly in part to discourage Arabs from making it their home.



Fig. 1. Modern Maktar.



Fig. 2. (Left) Pyramidal-topped mausoleum at Maktar. Third century.

Fig. 3. (Right top) Cornice detail of pyramidal-topped mausoleum.

Fig. 4. (Right center) Lintel and sacrificial relief of the same.

FAR NORTH OF the pyramidal mausoleum are eleven arcades of the ancient aqueduct (FIGURE 6). As early as 1862 GUÉRIN saw only twelve, but found traces of at least 80 more.

An important element in any Roman city was the forum.

That at Maktar (FIGURE 7) was still visible in 1888 and was only partially re-excavated when we were there in 1949. Column bases indicate raised porticoes on at least two sides. The jumble of walls to the left marks a row of shops. On the south side is the large Arch of Trajan, erected in 116 A.D. It was an elaborate structure with colossal columns flanking smaller columns which bore an inscribed entablature and low pediment. As one can see, our constant "companions" were the curious Arab children hoping for francs, cigarettes or chewing gum.

Near the Arch of Trajan, Mme. PICARD is excavating a confusing church complex representing at least two major building periods and perhaps more transformations (FIGURE 8). It is a long basilica with double colonnade. The north wall had been found when this photograph was taken, but excavations were incomplete to the south where a single row of columns replaces the wall. At some later date part of the nave and the apse were raised. Behind

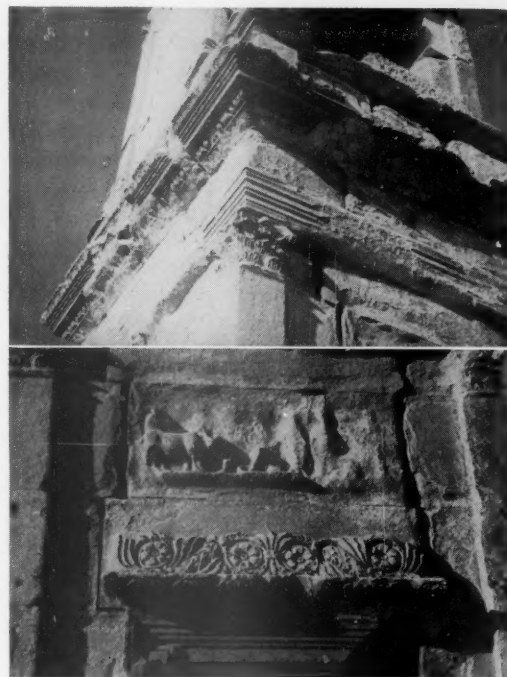


Fig. 5. (Left) Mausoleum of the Julii. Third century.

Fig. 6. (Right) Arcades of the Roman aqueduct.



the latter are a baptistery and apse. Such an arrangement is occasionally found in sixth century basilicas in Tunisia and double-colonnaded churches are not uncommon. But much more excavation is needed before one can hope to solve this particular architectural puzzle.



Fig. 7. Forum at Maktar, with the arch of Trajan near the center and the pagan-Christian basilica in the right distance.

The square baptismal font had a baldachin whose colonnette bases were decorated with pagan symbols, here a stag and bow (FIGURE 9). They seem rather out-of-place and actually were reused material taken from a mid-second century Temple of Diana and Apollo that today lies in complete ruin.

SOUTHWEST OF THE Arch of Trajan M. PICARD in 1944 excavated another church (FIGURE 10). It was originally a pagan building, with colonnaded courtyard and adjacent rooms along the north, and may have been a schola. It is seen here from the rear hemmed in by ruins which suggest the close quarters

of the city after some centuries of construction.

As used by the Christians, the small, three-aisled basilica had at either end four columns enclosing an "altar" (FIGURE 11). That to the west (in the foreground) stands in front of the apse, an arrangement typical of North African churches. The floor was covered with mosaic, both pagan and Christian. Among the proofs for Christian use of this building are three tomb mosaics cut into the nave pavement. Their style, epigraphy and formulae date them in the sixth century.

The "altar" is a striking example of the adaptability of pagan monuments to Christian use. It was the tomb

Fig. 8. Double-colonnaded Christian basilica.



stone of Julia Spesina, originally represented above her epitaph. The figure was effaced by the Christians but the other sides left intact. They portray a basket of flowers, a vase with grape vine, and stalks of corn on which perch grasshoppers and birds. According to M. PICARD they represent the Four Seasons—flowers symbolizing Spring, corn Summer, vine Autumn, and deceased Winter. All these elements, except the figure, were already a part of Christian symbolism and so made reuse of this monument possible.

At the east, in a kind of narthex, is a second monument unchanged from its position in the pagan building. Above the epitaph of Q. Julius Piso are traces of a figure offering incense. Why it was kept in the Christian church is one of the enigmas of this structure. From tombs and a dedicatory inscription found in the basilica M. PICARD conjectures that it was used as a pagan funerary basilica by the early third century. Its very quality as a sanctuary may be a reason why it was chosen by the Christians.

Many different types of capitals were found in the complex. Some were certainly part of the Roman build-

ing (FIGURE 12). Others (FIGURE 13) were probably brought from pagan monuments by the Christians. The grape capital (FIGURE 14), smaller and of quite different technique, was undoubtedly cut for the Christian reconstruction. The very simple, block-like capital (FIGURE 15), found in one of the rooms bordering the courtyard, may date as late as the seventh century.

As in so many ancient sites, in spite of repeated efforts to safeguard ancient monuments, the local inhabitants use the ruins as a quarry. Here an Arab family has ensconced itself in a large pagan building (FIGURE 16). In the great *thermae* Arabs live in the substructures. All the houses immediately on the areas are made of material from ancient buildings.

There is old precedent for such action. The Neo-Punic temple and at least one Roman building were made into Christian churches, and inscriptions and fragments of other buildings were the material for more. The Byzantines in their turn made the Arch of Trajan and the *thermae* part of their defenses. Now the Department of Antiquities and Fine Arts attempts to uncover the remains of the earliest



Fig. 9. Colonnette base reused in the baptistry of the double-colonnaded Christian basilica. Mid-second century.

Fig. 10. Pagan-Christian basilica at Maktar, seen from the southwest. Third-sixth centuries.



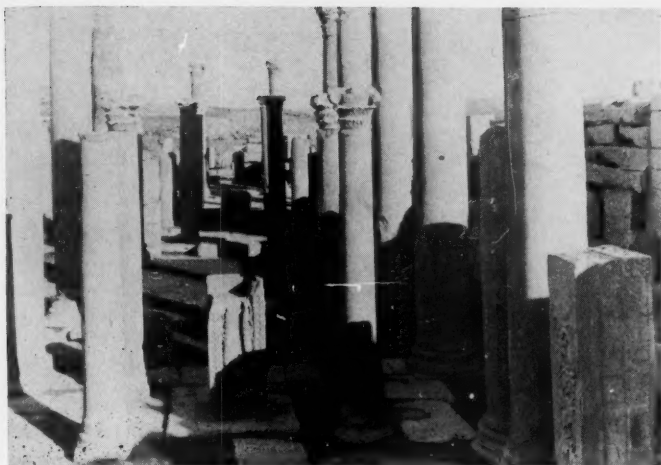


Fig. 11. Julia Spesina monument in the nave of the pagan-Christian basilica. Third century.

structures without destroying valuable evidence of succeeding civilizations and has also to prevent further such Romano-Arab dwellings.



Figs. 12-15. Capitals in pagan-Christian basilica.

Fig. 16. Arab dwelling.

THE COVER . . .

shows a corner of the Temple of Apollo at Corinth. Several of its columns, with monolithic shafts, still stand and support portions of the architrave. Certainly of the sixth century B.C., recent investigations tend toward a mid-century dating of the building. This photograph by ALISON FRANTZ has the air and spaciousness characteristic of her fine work.



General view of the Jarlshof mound from the south showing the prehistoric Bronze Age village exposed on the southern flank (foreground). Iron Age structures are exposed along the seaward side (left). To the right of the mediaeval ruins of Viking settlement is exposed down the landward slope of the mound.

From archaeological finds at Jarlshof in the Shetland Islands off the coast of Scotland experts have been able to construct a detailed picture of . . .

LIFE IN A VIKING SETTLEMENT

By J. R. C. Hamilton

Mr. John R. C. Hamilton graduated at Cambridge in the Archaeological Tripos. He is an Exhibitioner of Downing College. He received research grants for study in Germany, France, and Switzerland, and a Traveling Studentship to Sweden. He has undertaken field work in France, England, and Sweden. During the war he was in the Diplomatic Service, serving in Stockholm and as Press Attaché to the Political Mission in Finland. In 1948 he was appointed Assistant Inspector of Ancient Monuments for Scotland.

The illustrations are reproduced by courtesy of the British Information Service.

View from the east showing the rectangular house foundations, byres, and yard walls of the Viking settlement covering an area over two acres on the landward slope of the Jarlshof mound. The ruins of the early seventeenth-century dwelling house, known as Jarlshof since Sir Walter Scott wrote *The Pirate*, can be seen in the background.



A VIVID PICTURE OF LIFE IN VIKING TIMES is emerging from the excavations conducted by Britain's Ministry of Works at Jarlshof, in South Shetland, one of a group of islands off the coast of Scotland. Over a number of years archaeologists have been engaged in clearing the top soil and wind-blown sand covering the remains of a Viking settlement on the landward slope of a great mound near Sumburgh Head, the southernmost tip of Shetland. These remains consist of the foundations of nine long rectangular houses with associated outbuildings, byres, cobbled yards and enclosure walls covering an area of over two acres and dating from the ninth to the thirteenth centuries A.D.

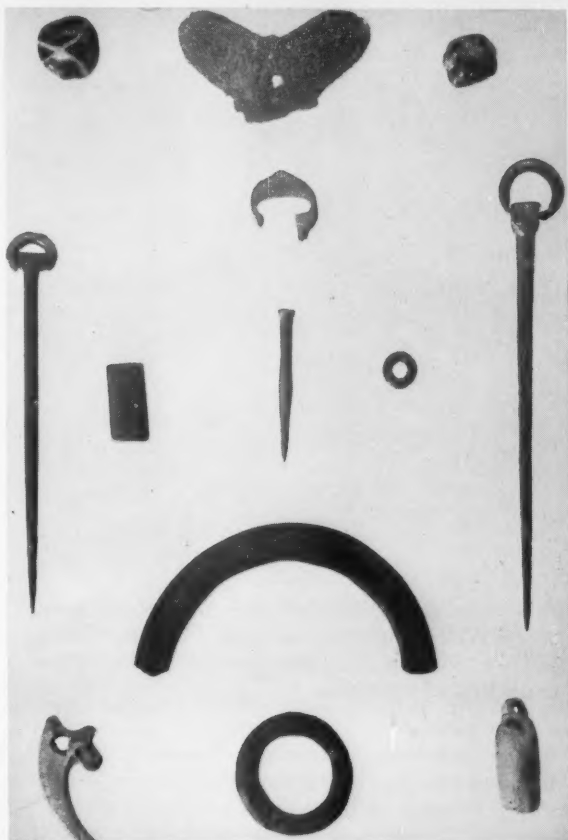
Only the lower courses of the walls survive but these are sufficient to show that each house underwent many rebuilding phases to meet the changing needs of the inhabitants. The inter-relationship of the various houses was established last year, enabling the history of the settlement to be followed over the four centuries of its existence. In its general appearance the settlement did not differ much from that of the old crofting villages still to be seen in the islands.

More than 4,000 finds have been recovered from the house floors and middens. From these it is possible to reconstruct much of the everyday life and economy of the Viking settlers and their descendants. Owing to the continuance of a simple crofting economy from Norse times it is possible to identify many objects found on the site with those still in use a generation ago. This survival is met again in the Norn or Shetland dialect which preserves a large vocabulary of Norse words and phrases. In many cases original Norse names can be assigned to the archaeological finds.

Peaceful Colonization

The history of the settlement begins with the arrival of Viking colonists from western districts of Norway in the early ninth century. These people appear to have been simple peasants or small farmers more interested in peaceful colonization than in sea roving and piracy. Only one weapon was found dating to this period—an iron spear-head. One or two imports from the south reached the settlement including small bronze pins of Scottish-Irish type and a bronze harness mount, probably traded by Viking raiders returning from the coasts of Ireland or Scotland in the autumn.

The settlement at this time was quite small, consisting of three long rectangular houses set close to each other. A fourth building was later added, the group being served by a paved path leading up the landward slope of the mound. On the other side of this path a series of outbuildings was constructed. As a result of this season's field work it is now known that



Glass beads, a fragment of a tenth-century trefoil brooch (top right), two imported bronze ring-headed pins (extreme left and right), fragment of a local bone copy, shale ring and bracelet, and bone pendants worn by Viking women at Jarlshof.

these outbuildings were erected within an older enclosure belonging to a few scattered families, probably Pictish, who lived in large circular huts. The foundations of these huts were built over by the new settlers. On the stone threshold to one a piece of slate was found having a cross with expanded terminals incised upon its face. It is well known that Christian missionaries from Ireland were actively engaged in the Islands



Four stone spindle whorls, a flax hackle (centre) of horn similar to wooden examples from the Viking graves in Norway, and a bone pin used by the women in the Jarlshof settlement.

before the coming of the pagan Norsemen, and this cross is probably a symbol of their influence among the native population.

Everyday objects used by the settlers included stone weights originally attached to heavy upright looms on which the women wove a coarse woolen cloth known as wadmal, spindle whorls used in spinning wool, iron knives and sickles, hand-line sinkers once attached to fishing lines, and a large variety of soapstone pots. Objects of adornment included beautifully made animal and ax-headed pins and hog-back combs similar to those found in the Oseberg boat burial in Norway.

New Dwellings Take Place of Old

As time passed the dwellings were expanded, a byre or storehouse being added to the gable ends. Gradually, however, the older houses fell into decay or were converted to farm buildings while new dwellings were erected on the site of the original outbuildings across the path. Finds from these later house floors include coarse clay cooking pots, fragments of thin bronze cauldrons, hanging lamps of soapstone, and a wide range of fishing implements. Small double-sided combs also make their appearance, probably imported from the comb workshops established at this time in Oslo and Bergen.

A comparative study of these everyday finds with the material culture of the older Shetland crofts reveals little change in the simple crofting life of the inhabitants during the intervening centuries. Even the crofts have retained many of the structural details known in the Viking long house, together with their original Norse names. The same rectangular plan is followed, the interior being divided into a living room and kitchen with storehouse or byre attached to a gable end. From the evidence contained in the Icelandic Sagas and from the hog-backed tomb stones representing houses of that period, we know that the long house roofs consisted of turf shingles laid upon pur-lins, covered with straw and secured from the wind by

A Shetland outbuilding showing primitive method of construction. Note the stone lintelled doorway and straw-thatched roof secured by simmonds.



ropes weighted with stones. A vent near the ridge allowed the smoke from the fires to escape, while at a lower level small apertures, called *gluggr*, served as windows.

This form of roof structure is preserved to this day in the old Shetland crofts. For example, the small roof windows are called *gleggr*, the turf shingles, *pons* (derived from the Old Norse *spann*), while the weighted ropes are still called *simmonds*, derived from the Old Norse *sima*, a 'rope.'

Farmers and Fishermen

From the numerous animal and fish bones preserved in the middens it would appear that the settlers, like



Finds in the Viking settlement include two perforated soapstone swills (top and centre), two whetstones (left), one perforated for suspension to belt, two iron fishing hooks, and fragment of iron sickle blade.

Sheep tethered, showing the modern wooden swill attached to the ropes to prevent twisting. Soapstone swills were found in the Viking settlement.

the later crofters, depended for their livelihood on farming and fishing. Considerable numbers of sheep, cattle, and pigs were kept, while fish caught included saithe, ling, cod, and angler. Fishing was no doubt mainly confined to the summer months, a large proportion of the catch being dried or smoked for the winter. Hand-lines were used with large sinkers in the deeper waters off the coast, while small soapstone weights were employed in surface baiting in the fierce tideway or "raust" just off Sumburgh Head. Oil was

no doubt extracted from the saithe, as in later times, for use in the small stone lamps or "kollies" (Old Norse *kola*) lamp.

Good grazing land for sheep lay within easy reach of the settlement on the higher slopes of the headland. The rich arable land on the landward side of the mound which had attracted man to the site from Bronze Age times was probably intensely cultivated. An indication of the farming methods employed is given by the small soapstone swills found in the outbuildings. These small

A midden (or kitchen midden) is the early equivalent of the town dump but used for garbage as well. All sorts of discarded household refuse such as broken pots and bowls as well as bones of animals and fish went into it. Some middens, especially the kitchen middens of Denmark and Scandinavia, are composed mainly of the shells of shellfish, but the Shetlanders of this article did not seem to collect them.



View of an old Shetland croft with roof lights (gleggr) above the modern window. The straw thatch covering the turf shingles is secured by simmonds.

perforated blocks of stone are identical to the small wooden swills used on the tethering ropes attached to animals grazing between strips or rigs of cultivated ground on the modern crofts. This strip system of

A selection of toys popular among the Viking children. The circular soapstone objects perforated in the middle are model quernstones turned either by hand or built into small watermills. The decorated bone (bottom right) resembles the modern *snoriben* (bottom left) spun on a double strand of wool. A model line sinker used in fishing (top centre).



cultivation, widespread in mediaeval times, was no doubt introduced into Shetland by the Vikings. Crops were harvested with small sickles, fragments of which were found, the grain being milled in the village.

A small Shetland "toonship" with strips of cultivated ground on the lower slope of the hill. The old houses are very similar in appearance to the Viking houses excavated at Jarlshof.



ATHENS:

A MYCENAEAN NECROPOLIS UNDER THE AGORA FLOOR

By Lucy Talcott

Photographs by Alison Frantz

ONE OF THE MOST INTERESTING RESULTS OF THE 1951 SEASON of excavation conducted by the American School of Classical Studies in the Athenian Agora was the confirmation of the existence of an extensive cemetery of the Late Bronze and Early Iron Ages (fifteenth to tenth centuries B.C.) beneath the market square of classical times. In earlier seasons graves and chamber tombs, including some with a good claim to be called royal, had been found on the neighboring slopes of the Areopagus and Kolonos; the new discoveries greatly enlarge the area of the burial ground and push back the date of its first use by a century or more, thus adding a long paragraph if not a chapter to the history of Athens.

The burials found in 1951 include three chamber tombs and ten pit graves scattered beneath the northern part of the Agora. The associated pottery ranges from Late Helladic II to developed Protogeometric. A selection of the earlier vases, i.e., of the Mycenaean period, is illustrated on the following two pages.

The central picture shows a typical pit burial of an adult of the fourteenth century B.C. with two vases set at the skeleton's head, and a small bronze knife lying on top of the larger vase.

The other vases come from two chamber tombs and from a child's pit burial. The group shown at the upper left gives part of the sepulchral furniture of a chamber tomb which underlay the foundations of the Temple of Ares, and which had been used for successive burials for close on three hundred years. The group illustrated belongs to about the middle of this long period, and shows vases associated with interments of the fourteenth century. The careful spiral decoration of one of the drinking cups is shown in a detail below. From the same tomb, but possibly a little earlier than the main group of vases, is the handsome jug decorated with an octopus, shown on the right side of the plate. The goblet with high-swung handles, illustrated below the group, is the earliest vase from this tomb, and may be

dated in the fifteenth century B.C. It is of a very fine, smooth-finished fabric, undecorated outside, but with the interior glazed a rich chocolate brown.

In the upper right-hand corner of our plate are two small spouted vases, one of clay, the other of bronze with its wishbone handles perfectly preserved. These vases, of the thirteenth or possibly the twelfth century B.C., were all that remained of the contents of another chamber tomb most of which had been cut away by well-diggers of the fifth century B.C.

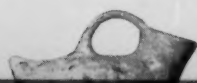
THE TEN VASES SHOWN along the bottom of the plate are the pottery contents of the grave of a young girl, a small pit burial packed tight with objects of unusual interest, dating probably from the late fifteenth century B.C., among them an ivory comb and pin, a necklace and a handful of sea shells. The most distinguished of the vases is the beautiful bowl (center left) with three suspension handles, decorated in red-brown glaze with a graceful lily motif. It is one of the finest and also one of the earliest Mycenaean vases yet found in Athens.

The lily motif may be contrasted with the more stylized flower design shown in a detail at the right side of the plate. It comes from a large krater of the fourteenth century, found in a deposit, probably to be connected with a burial, to which also belongs the cup with octopus design of which a detail appears at the center above.

The dates suggested here are tentative and the vases await careful study. Meanwhile it is possible to enjoy for the first time something of the variety and of the high artistic standards which, it is now known, characterized the taste of ordinary folk in the Athens of Mycenaean times.

Athens: A Mycenaean Necropolis Under The Agora Floor.







Leptis Magna

A view of part of the city, looking towards the sea and to the artificial harbour (top right), now silted up, that Septimius Severus built at the river mouth. In the foreground are the great Baths, built under Hadrian; and beyond it the main group of Severan buildings—a circular piazza with a monumental fountain-building; the ruins of a colonnaded street, leading down to the harbour; and a very large forum and basilica. The arch is just off the photograph, in the left foreground.

THE WHOLE OF NORTH Africa is rich in the remains of Roman antiquity, and Tripolitania is no exception. Of the three cities that gave the territory its name ('land of the three cities'), only Oea, the modern Tripoli, has been continuously inhabited since Roman times. The other two, Leptis Magna and Sabratha, were deserted soon after the Arab invasion of the seventh century A.D., and their remains, left to crumble quietly and only recently uncovered by the enterprise of Italian archaeologists, are among the most

THE ARCH OF SEPTIMIUS SEVERUS AT LEPCIS MAGNA

By J. B. Ward Perkins

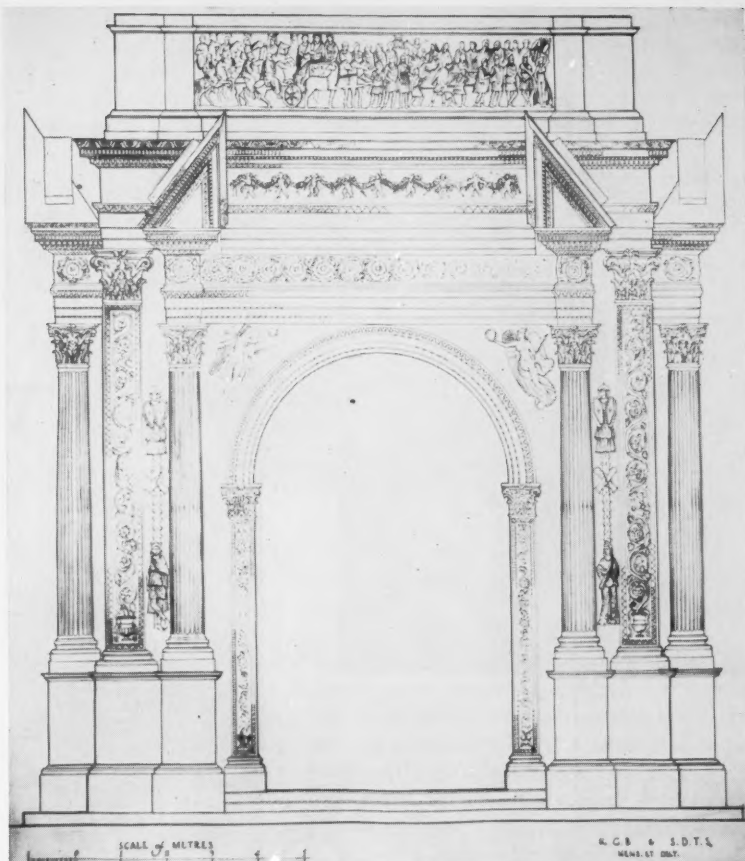
Director of the British School at Rome.

Photographs, unless otherwise noted, are by the author and the British School.

spectacular surviving monuments of classical antiquity.

Lepcis Magna has the additional distinction of being the birthplace of the Emperor Septimius Severus, who was born there a few years before the middle of the second century A.D. He came of wealthy provincial stock: his grandfather had been chief magistrate of the city when the Emperor Trajan raised Lepcis to colonial rank; and even after he became Emperor himself, members of his family continued to live there. It is not surprising, therefore, to find that during his reign and that of his son, Caracalla, many fine buildings were erected in the city. Among them was a triumphal arch. Its date is not directly recorded; but it was almost certainly put up to greet the Emperor on the occasion of his African tour in A.D. 203, and it was therefore almost exactly contemporary with the well-known arch in the Forum at Rome.

The arch at Lepcis, which is of the type with two carriageways intersecting at right angles, stood at the crossing of the city's two main streets. It fell into ruin in late antiquity; and some of the sculpture found its way to the church that Jus-



The arch of Septimius Severus at Lepcis Magna

Restored drawing of one face. The columns on either side are those of the lateral faces of the arch, seen in side-elevation.

tinian built within another of the city's Severan monuments, the great judicial basilica. What remained was buried; and all that was left to greet the early European travellers to the Barbary Coast was the crown of one of the four archways, emerging from the sand-dunes.

After the first world war, when Italian archaeologists began to excavate at Lepcis Magna, it was one of the first buildings to be cleared. In 1925-6 RENATO BARTOCCINI uncovered the remains of the arch itself and the greater part of what survives of the sculpture that once adorned it, and he published a preliminary account of the finds in *Africa Italiana* 4 (1931) 32-152. Since then GIACOMO CAPUTO has found more fragments, which complete the known series of sculptures in a number of important respects; and in 1949 two young English architects, DENYS SPITTLE and KENNETH BROWNE, members of the British School at Rome's expedition to Tripolitania, made the first detailed architectural survey of the remains. This sur-



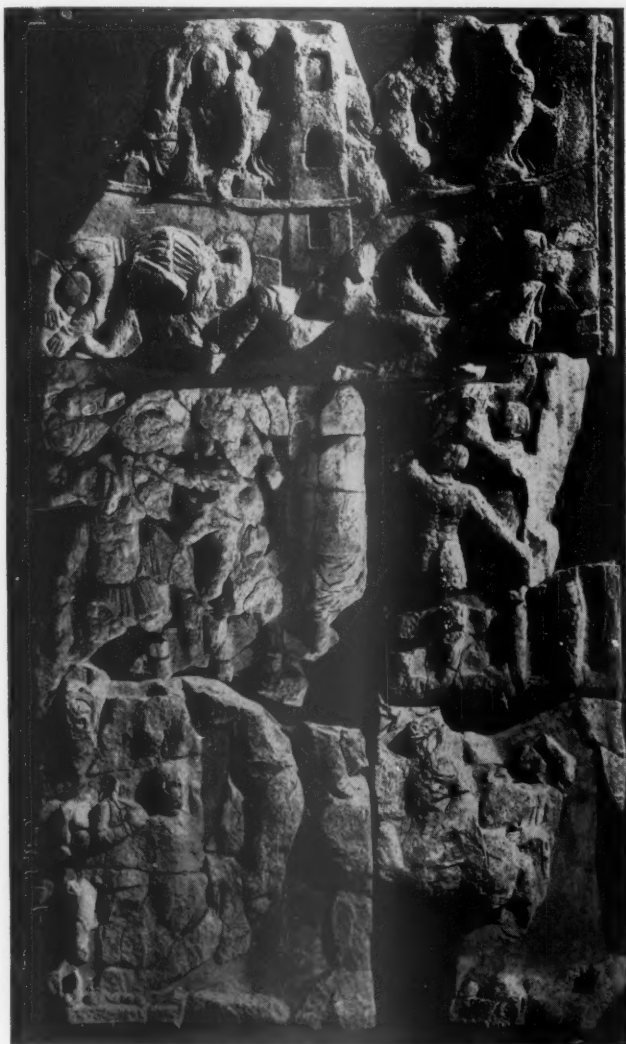
A winged Victory

One of the eight Victories, two on each face of the arch, in the spandrels between the arch-way and the main entablature. Note the graceful, but anatomically quite impossible, swing of the torso.

vey has established beyond question the position of the main sculptural panels, and has made possible a theoretical restoration of the arch that is certain in all except one or two trifling details.

It was a curious, rather than a beautiful, monument, heavily proportioned and overloaded with ornament. Architecturally, the most striking and unusual feature is the steeply-inclined broken pediment that crowns the pair of projecting columns flanking each arch. It recalls the rock-cut facades of Petra and suggests that the arch was probably planned by the same East Roman architect as was responsible for the other Severan monuments of Lepcis. It is certain that the marble is from Greece and that a substantial part of the architectural ornament was carved by craftsmen from Asia Minor. They were helped by local apprentices; and when the job was done they moved on to decorate the Severan forum and basilica.

THERE ARE TWO SETS of historical, figured reliefs. The one set consists of four large panels, three-quarter life-size, one on each of the four faces of the



The Siege panel from the Severan arch

Figured panel, about 11 feet 6 inches high, showing the siege of an oriental city by the Roman army. In the middle of the three panels immediately below the central tower of the city walls can be seen the "*testudo*" ("tortoise") of Roman troops advancing under the cover of their overlapping shields.

attic: two of them depict triumphal processions, one a sacrificial scene, and one (rather ironically) a scene symbolic of the domestic harmony within the Imperial

A group of deities

Part of one of the smaller figured panels showing, in the centre, the Emperor and Empress as two of the three Capitoline gods, Jupiter-Serapis and Juno (with her peacock at her feet); the third of the triad, Minerva, stands on the right, with owl and shield. The fourth figure, on the left, is the "Tyche," the protecting divinity of Lepcis Magna.



family. The other set is more varied, and consists of eight panels that were set, facing each other in pairs, on the inner faces of each of the four archways: the individual figures are smaller, and the subjects range from conventional groups of divinities to the siege and capture of an oriental city. The last-named was burned and smashed in antiquity, and has only recently been re-composed under the care of Professor CAPUTO. At the top, long-robed orientals armed with bows line the walls of the besieged city, along the foot of which are heaped their dead and wounded. The attacking army occupies the middle register: in the centre, troops advance under cover of the *testudo* of shields; on the left can be seen the heavily-armed legionaries; and on the right, a varied group of auxiliary troops. In the fore-

ground can be traced the figures of two generals on horseback (perhaps Severus and Caracalla); and before them stand a group of captives, marshalled by Hercules, the protecting divinity of Lepcis Magna. Even in the present ruinous state of this panel, something can be seen of the vigorous quality of dramatic narrative that makes it one of the most striking recent additions to the repertory of Roman relief-sculpture.

There can be no doubt that the sculptors who carved the reliefs on the arch came from abroad: where they came from, is another matter. Only about the Siege panel does there seem to be general agreement that, if the artist did not actually come from Rome, his work is at any rate closely related to that of the craftsmen who carved the historical panels on the arch of Severus in the Forum at Rome. There are important differences of detail; but the resemblances—the map-like spatial convention, the disproportion between figures and setting, the emphasis on narrative content—cannot fail to strike the observer. It is expressive, vigorous work; and at times (for example, the dead warrior) it would seem almost more at home in the mediaeval than in the classical world.

Some scholars believe that the other panels, too, were carved by sculptors trained in the capital, and that they are the last representatives of the great school of historical relief-sculpture established in Rome since the time of Augustus. Others, and amongst them the present writer, believe that most of the figured panels at Lepcis

Fallen warrior in the Siege panel

One of the defenders, dead at the foot of the walls. He wears a Parthian cap, seen here from the back.





The Triumph Panel

Part of one of the large figured panels from the attic of the arch, showing Septimius Severus and his two sons, Caracalla and Geta, carried in triumphal procession. Note the deliberate frontal distortion of the central group, swung round out of the line of the procession to face the spectator.

were, like much of the decorative sculpture, carved by sculptors from the Roman East, probably from Asia Minor. There are elements in the composition of the Lepcis panels that invite comparison with the second-century sculpture and painting found on the eastern fringes of the Roman Empire, at Palmyra and at Dura Europos.

There is, for example, a marked tendency to arrange the figures frontally, facing the spectator rather than each other as, very strikingly, in the central group of the Triumph panel; and although some of the scenes display the naturalistic, balanced composition of classical tradition, others (for example, the Sacrificial panel) fall into formal, rhythmical patterns, in which the unity of effect is achieved by repetition of visual accent and by pattern, rather than by the harmonious balance and interaction of the individual figures. To many scholars, these tendencies, which have as yet only partially been assimilated by the artists of the

Lepcis panels, will be felt to point to eastern influence; and although all too little sculpture comparable in scale and purpose has survived in the Roman East, a set of Antonine relief panels, found at Ephesus and now in Vienna, proves that such sculpture did once exist.

WHATEVER THE ORIGIN OF the sculptors, however, their work marks an important stage in



Two sections of the vine-scroll angle-pilasters of the arch

Re-used as balustrades in the church that Justinian's architects installed, soon after A.D. 530, in the Severan basilica.



The Sacrificial Panel

The right-hand half of another of the large figured panels from the attic of the arch, showing a scene of sacrifice. The figure on the left is the Syrian-born Empress, Julia Domna. Note the conventional grouping of the figures, which in the strong African light make a neat, orderly pattern of light and shade.

the evolution from classical to late antique art. The artistic background of these reliefs is the established classical tradition; but they contain elements also that were alien to that tradition and were to play an important part in its eventual dissolution. Neither frontality nor rhythmical composition was new to Roman art; what was new and significant was their introduction into official relief sculpture of this size and character.

A full publication of the arch of Septimius Severus by the author and G. Caputo is now in hand. Mrs. Phyllis Pray Bober is writing an article on the arrangement and significance of the figured panels.—J. B. W. P.

Detail of the Sacrificial Panel

While the whole panels can hardly be called beautiful, still details of the arch sculpture are compelling.



THE ANCESTRY OF THE ENGLISH ALPHABET

By John Hurt Fisher

A native of Kentucky reared in Persia where his father is an educational missionary, John Fisher is a graduate of Maryville College, Tennessee (A.B., 1940), and the University of Pennsylvania (A.M., 1942, Ph.D., 1945). He is Assistant Professor of English at New York University and his edition of The Tretyse of Loue appeared in the Early English Text Society Series in 1951.

ENGLISH GRAMMAR IS WONDERFULLY DIRECT, ECONOMICAL, expressive. English spelling is five centuries out of date, illogical, and misleading—a crazy-quilt of conflicting principles which has evolved from the practice of semi-literate mechanics like scribes and printers. For at least three hundred years English spelling has been a source of consternation to scholars who knew something of the French or Latin from which over sixty percent of our vocabulary is taken and the changes in pronunciation that have taken place since Chaucer's day, but there has been little that they could do about it.

The situation was once much better. The earliest writing in the English language, dating from before 800 A.D., was done by scribes who had previously been trained to read and write Latin. They wrote English on exactly the same principle that the missionary uses when he writes an African dialect with the English alphabet. They matched the sounds of English as carefully as they could with the sounds represented by the letters in the Latin alphabet, leaving out the letters for which English had no need, and borrowing from the

runic alphabet letters needed for sounds not represented in the Latin alphabet.

So far as we know, these early English scribes were starting almost from scratch. There is little evidence that the Teutonic tribes which conquered England between 450 and 600 A.D.—Angles, Saxons, and Jutes, the Venerable Bede designated them—had had any experience with writing. Their own manuscripts and inscriptions all date from some time after St. Augustine and his forty monks landed in Kent in 597 A.D. They may have brought with them some knowledge of the runic alphabet in which the earliest inscriptions in northern Europe (dating from about 300 A.D.) are preserved, but even here the evidence is not clear. As we shall see, their earliest vernacular records made little use of the "thorn" þ and "wen" ƿ borrowed from the runic. However, the earliest runic inscriptions are contemporary with the oldest manuscripts (see FIGURES 1 AND 2), and the special developments in the English runic alphabet likewise suggest that the Angles and Saxons had been familiar with that alphabet for some time.

The runic alphabet, which may have stemmed origi-

The English preserved in scattered texts dating from the period before there was any established tradition of writing in the vernacular (up to about 850 A.D.) we may call Oldest English. Old English proper, or as it is frequently called, Anglo-Saxon, dates from the educational reforms of Alfred the Great (871-900 A.D.) whose translations and schools established a tradition of English prose and poetry which lasted for a century beyond the Norman Conquest. Middle English dates from about 1200 to Caxton's introduction of printing into England in 1476. Early Modern English we may consider as dating from 1476 to the Puritan Revolution in 1642. From that time on, we date English by

centuries, reserving the terms Newest or Contemporary for what we speak today.

One final signpost: French does not have the distinct divisions that history has produced in English. The language is called Old French from its earliest glosses to the beginning of printing (about 1450), but its chief influence on English comes in the thirteenth and fourteenth centuries. Anglo-Norman is the French written and spoken in England from the time of the Conquest down into the fourteenth century. It was derived from the Norman dialect in France, which came to be considered crude and provincial as Paris assumed cultural and political supremacy.

<i>acmelae</i>	<i>stigh</i>	<i>acmoe</i>	<i>Snactipawch</i>	<i>acnasas</i>	<i>mildae</i>
<i>almetae</i>	<i>actih. hote</i>	<i>alcebastum</i>	<i>uas de gemme</i>	<i>acdepto</i>	<i>binummi</i>
<i>alpe</i>	<i>paen</i>	<i>acbatice</i>	<i>siboced</i>	<i>acdeptatna</i>	<i>clefthocet</i>
<i>acpelle</i>	<i>locam</i>	<i>acpnce</i>	<i>iii. modios tenet</i>	<i>acdeceatla</i>	<i>thegn</i>
<i>accearium</i>	<i>steel</i>	<i>almoec</i>	<i>pl. iusneamelos</i>	<i>acdepto</i>	<i>binummi</i>
<i>acuellacms</i>	<i>aes</i>	<i>acpice</i>	<i>acnacatonepumi</i>	<i>accesstus</i>	<i>euocatus fetod</i>
<i>anconoy</i>	<i>uncenoy</i>	<i>acms</i>	<i>fraam</i>	<i>ablata</i>	<i>binummi</i>
<i>altrinsecus</i>	<i>anba balbae</i>	<i>aucapatione</i>	<i>setunzae</i>	<i>ammodum</i>	<i>ualde</i>
<i>addictus</i>	<i>faerscribaen</i>	<i>addicauit</i>	<i>bisceredae</i>	<i>abdensis</i>	<i>abscondens</i>

Transcription (Old English glosses are in italics; Modern English derivatives are starred):

Original	Gloss	Original	Gloss	Original	Gloss
auriola	<i>stigh</i> (path, *sty)	anna	<i>grati filio domini</i>	agrestes	<i>uuildae</i> (*wild)
almeta	<i>alterholt</i> (*alderwood)	alabastrum	<i>uas de zemma</i>	adepto	<i>zinumni</i> (taken away)
alpa	<i>paar</i> (callous)	arbatae	<i>sibaed</i> (*sieved)	adfectaret	<i>desideraret</i>
arzella	<i>laam</i> (*loam)	anfora	<i>iiii. modios tenet</i>	adsaeculam	<i>thezn</i> (*thane)
accearium	<i>steel</i> (*steel)	aluiola	<i>pelvis rotundos</i>	adepta	<i>binummi</i> (taken away)
auellanus	<i>aesil</i> (haesil, *hazel)	auspica	<i>cantationes auium</i>	arcessitus	[ue]l euocatus <i>fetod</i> (*fetched)
anconos	<i>uncenos</i>	acris	<i>fraam</i> (vigorous)	ablata	<i>binummi</i> (taken away)
altrinsecus	<i>an ba balbae</i> (*on both halves)	aucapatione	<i>setunzae</i> (ensnaring, *setting)	ammodum	<i>ualde</i>
addictus	<i>faerscribaen</i> (decreed, *foreshriven)	addicauit	<i>bisceredae</i> (deprived)	abdensis	<i>abscondens</i>

Fig. 1. A passage from the Epinal Glossary, showing how the first English was written. This twenty-eight page glossary its editor, HENRY SWEET, states "was probably written not later than the beginning of the eighth cent., being a copy of an older MS. of undeterminable date." As such, it presents some of the oldest, if not the oldest, samples of writing in English. It is one of four closely allied glossaries based upon interlinear glosses, Latin and English, in Latin books, probably at Canterbury. These interlinear glosses were later copied out and arranged in semi-alphabetical form as class glossaries for teaching young clerics Latin. The corruptions in the spelling of the Latin words make the manuscript as important to students of the Romance languages as it is to students of English.

As may be seen, the manuscript is written in six columns, the difficult Latin word coming first, and the gloss in English or Latin (or both, as for *arcessitus*) beside it in the next column. The regular use of uu for w may be observed in *uuildae* in the last column; and th in *thezn* in the same column. The thorn and wen are occasionally found in the manuscript.

nally from the ancient Greek alphabet, was apparently used more for symbolic purposes than for writing in any real sense. The Old Norse word *rím* meant 'secret' as well as 'letter,' and the characters were originally used for inscription on stone or wood or metal more for their religious or magical significance than to convey information. In their wanderings the Vikings disseminated runic inscriptions very widely—perhaps from Minnesota to Antioch—but the alphabet was never used extensively except in Iceland and the Scandinavian countries. Although it was in some ways better adapted to

the sounds of English than the Latin alphabet, and persisted in England along with the latter for some time, it had no lasting influence upon the development of our present alphabet.

From the Latin and runic alphabets the writers of Old English devised a fairly satisfactory phonetic alphabet. But the English language has been fated to undergo, at the hands of conquering invaders, many more profound changes than any of the other European languages. In the ninth and tenth centuries came the Danes. They spoke a dialect very nearly like Old Eng-

lish in its vocabulary, but different in pronunciation and grammar. Their influence probably had much to do with the disappearance of inflectional endings which makes the chief difference between modern German and English.

A hundred years later, the Norman Conquest put English into the hands of scribes who had been trained to write French, and to assign French instead of English sounds to the letters in the Latin alphabet. They practically, but not completely, respelled English to conform with French orthography. Furthermore, hundreds of French words were brought into

its attendant standardizing effects was introduced just in the middle of this period (1476)—when both spelling and pronunciation were least stable. As a result, the early printers were constantly bedeviled by whether to follow the spellings in their manuscripts, usually representing the old pronunciation, or to alter the spellings to indicate the new pronunciation. As the

Norman scribes had done before them, they did a little of both, and English spelling emerged into the sunlight of the Elizabethan age a palimpsest historically fascinating, but practically maddening.

The Consonants

Our consonant letters have come fairly directly from Latin through Old English: b, d, l, m, n, p, r, and t show little change.

c, k, q

But the early English monks realized that c, k (used infrequently in the Latin they knew), and q were redundant. Hence they used c for the *k* sound, which produced spellings such as *cing* for *king* and *cwic* for *quick*. In French c had already begun in certain positions to have the sound of *s*, as in *cent* and *cité*; so Norman scribes introduced k to prevent confusion. Likewise in both Latin and Old French, the *cw* sound was spelled qu (it has since been reduced to the *k* sound in French), and Norman scribes introduced this spelling into English, changing *cwen* to *queen* for

example, and *cwacian* to *quake*.

The spelling ck for the *k* sound in the middle and at the end of words occurred only occasionally in Middle English, and then usually as a variant for kk, as in *licke* beside *likke*, *packe* beside *pakke*, and *locke* beside *lokke*. Otherwise the spelling was simply k, as

Fig. 2. An engraving of the lower panel of the west face of the Ruthwell Cross, containing passages from the Old English poem, "The Dream of the Rood," in runic characters, in the Northumbrian dialect. On the basis of the epigraphy and the language, this monument has been assigned to the first half of the eighth century. The runes appear more clearly in the engraving than they do on the original; some scholars have questioned details of the readings. The inscription on the north face is in Latin and reads as follows:

+ IHS XPS
IVDEX AEQVITATIS.
BESTIAE ET DRACONES
CO(G)NOUERVNT IN DE-
SERTO SALVATOREM MVNDI.
+ SCS PAVLVVS. etc.



Transcription (across top and down right column): [on]geredæ hinæ god
Translation (wherever possible in a derived form): girded him God

almeyottig, þa he walde on galgu gistiga, modig fore . . .
almighty, when he would on gallows ascend, fearless [*moody] before . . .

(Left column): [ahof] ic riicnæ Cūningc, heafunæs hlafard. hælða ic
hove I rich King, heaven's lord. Lean I

[n]i darstæ. bismærædu unget men ba æt-gad[r]e. Ic . . .
not durst. Mocked us men both together. I . . .

the language by the French-speaking scribes and nobility, and many kept their French spelling even after they had been Anglicized in pronunciation.

Finally, between the time of Chaucer and Shakespeare, the English language underwent great changes in pronunciation. As fate would have it, printing with

in *quik* and *reken*. By the sixteenth century the medial and final *k* sound had almost always come to be spelled *ck*, and in the eighteenth Dr. JOHNSON, believing that *ck* represented an etymological spelling, insisted on spelling *logick*, *rhetorick*, *politick*, and *choleric* with their "Saxon *k*." The *ck* has remained in the middle of words and at the end of words of one syllable. But at the end of most words of more than one syllable the final *k* has dropped off since the eighteenth century, partly through NOAH WEBSTER'S efforts to simplify spelling.

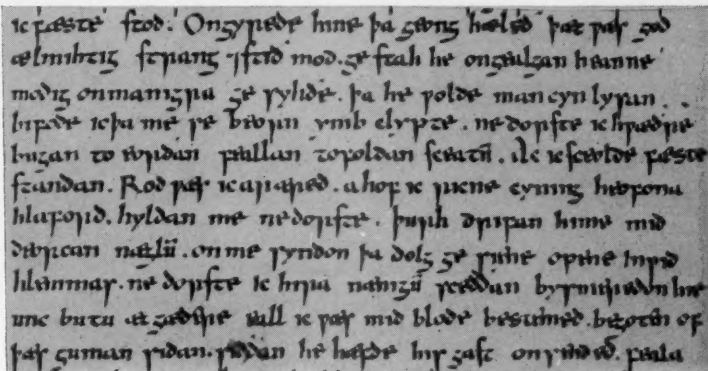
ch

Apparently Old English at first had no sound *ch* as in *church*, since no spelling was devised to indicate it. We believe that this sound developed during the Old English period at least by the beginning of the tenth century. When Norman scribes began to write English, they recognized it as a sound that had long existed in French and been spelled *ch* in French manuscripts since the eighth century. So when *ceap* becomes *cheap* and *cild* becomes *child* between 1100 and 1200, we must suppose not that the sound represented by the symbol *c* was itself changing, but that a distinctive symbol had been adopted for a sound already established.

f, v

The early English scribes recognized no more difference in writing between sounds of *f* and *v* than we do between the *f* in *roof* and *of* which we represent by the same letter, or the *v* in *have* and colloquial *have-to*. They used only the letter *f*, which automatically had the sound of *v* in *have* when it came between voiced sounds. Thus we find *lufode* for *loved* and *ofer* for *over* where the *f* in Old English certainly had the sound of *v*. However, Old French did have the *f* sound intervocally, in words like *afermer*, so the

Fig. 3. A passage from the Vercelli Book, a manuscript of Old English poetry and prose that has been for many centuries in the cathedral library at Vercelli, Italy. The Vercelli Book is assigned to the second half of the tenth century, and is in the West Saxon dialect. Note the regular use of thorn (*þ*) and wen (*ƿ*) and the characteristic Old English shapes for *g*, *r*, and *s*, and the 7 for *&*. This passage also is from "The Dream of the Rood," and presents in expanded form the same section as the runic text from the Ruthwell Cross reproduced on the facing page.



Transcription: Onzyrede hine þa Ʒeon3 hæleð þæt þæs Ʒod
Translation: Girded him the young hero that was god

ælmihƷig stranƷ 7 stiðmod. Ʒestah he on ƷealƷan heanne,
almighty strong & steady hearted [*moody] stepped he on gallows high
modiƷ on manizra Ʒesyhðe þa he þolde man cyn lƷyan.
fearless [*moody] in many faces [*sights] there he would mankind save.
biƷode ic þa me se beorn ymb clypte. ne dorste ic hƷæðre
Bent I when me the youth [*bairn] around clasped. Nor durst I either
buzan to eorðan feallan to foldan sceatum. Ac ic sceolde fæste
bow to earth to fall to earthward. But I should fast
standan. Rod þæs ic aræred; ahof ic ricne cyning, heofona
stand. Rood was I reared; hove I rich king, heaven's
hlaƷord; hƷyldan me ne dorste. þurh drifan hi me mid
lord; lean me not durst. Through drove they me with
deorcan næƷlum; on me syndon þa dolƷ Ʒesiene, opene inƷid
dark nails; on me are the scars seen, open inƷiduous
hlemmas. ne dorste ic hiran ænizum sceððan. bysmeredon hie
gashes. Nor durst I to them any injuries. Mocked they
unc butu ætƷædere. eall ic wæs mid blode bestemed beƷoten of
us both together. All I was with blood bestained begot of
þæs zuman sidan siððan he hæfde his Ʒast onsended.
this man's sides since he had his ghost sent away.

Norman scribes could not follow English usage. Instead they used the *v* as in French and Latin, interchangeable with *u* in shape, but always followed by a vowel. Since *u* was seldom followed by a vowel, there

ic eom drihten ðin god ne þyrce ðu ðe agraþene godas. ne ne
 purða. ic wrece fædera unrihtþisnesse on bearnum.
 7 ic do mildheortnesse ðam ðe me lufiað. 7 mine bebodu
 healdað. ne nemne ðu drihten ne nama on idel. ne bið he un-
 scyldig se ðe his nama on idel nemð. 7 ehalza þone resten-
 dæg. þyrce six dægas ealle ðine þeorce. Se seofoda is drihten
 rest-dæg ðines godes ne þyrce ðu nan þeorce on ðam dæge.
 ne nan ðæra ðe mid ðe beo. On six dægon god 7eþorhte heo-
 fonan. 7 eorðan. 7 sæ. 7 ealle ða ðinc þe on him synd. 7 reste
 ði seofodan dæge 7 he halgode hine. arþurða. fæder 7 mo-
 dor. ne sleh ðu. ne synja ðu. ne stel ðu. ne beo ðu on leasre
 7eþitnesse. (ne) onjean ðinne nextan. ne þilna ðu ðiner nex-
 tan huses. ne ðu his þifes. ne his þeales. ne his þylne.
 ne his oxan. ne his assan. ne nan ðæra ðinja þe his synd.
 ne nan ðæra ðinza þe his synd.

Transcription: ic eom drihten ðin god ne þyrce ðu ðe agraþene godas. ne ne
 Translation: I am Lord thy God. Nor work thou thee graven Gods. Nor

purða. ic wrece fædera unrihtþisnesse on bearnum
 worship (them). I wreak (the) father's unrighteousness on (the) children.

7 ic do mildheortnesse ðam ðe me lufiað. 7 mine bebodu
 & I do mildheartedness (to) them that love me, & my commandments

healdað. ne nemne ðu drihten nama on idel. ne bið he un-
 hold. Nor take thou God's name in idleness. Nor is he

scyldig se ðe his nama on idel nemð. 7 ehalza þone resten-
 guiltless that his name in idleness takes. Hallow the rest-

dæg. þyrce six dægas ealle ðine þeorce. Se seofoda is drihten
 day. Work six days all thy work. The seventh is God's

reste dæg ðines godes ne þyrce ðu nan þeorce on ðam dæge.
 rest-day, thy God's; nor work thou no work on that day,

ne nan ðæra ðe mid ðe beo. On six dægon god 7eþorhte heo-
 nor none of them that be with thee. In six days God wrought the hea-

fonan. 7 eorðan. 7 sæ. 7 ealle ða ðinc þe on him synd. 7 reste
 vens & earth & sea & all the things that in them are, and rested

ði seofodan dæge 7 he halgode hine. arþurða. fæder 7 mo-
 the seventh day. & he hallowed it. Honor (thy) father & mo-

dor. ne sleh ðu. ne synja ðu. ne stel ðu. ne beo ðu on leasre
 ther. Nor slay thou. Nor fornicate thou. Nor steal thou. Nor be thou in lying

7eþitnesse. (ne) onjean ðinne nextan. ne þilna ðu ðiner nex-
 witness against thy neighbor. Nor covet thou thy neigh-

tan huses. ne ðu his þifes. ne his þeales. ne his þylne.
 bor's house, nor his wife. nor his manservant, nor his maidservant.

ne his oxan. ne his assan. ne nan ðæra ðinja þe his synd.
 nor his ox, nor his ass, nor any of the things that are his.

was little confusion. Thus was established the tradi-
 tion, to which we still adhere, of never ending a word
 with v: *have*, *solve*, *slave* (*Slav* is a modern abbrevia-
 tion of *Slavonian*—cognate with *slave*). The silent -e,

Fig. 4. The Ten Commandments from Ælfric's Old English Heptateuch, British Museum, MS. Cotton Claudius B. IV. This manuscript, probably the oldest of the seven extant containing this text, and formerly the property of St. Augustine's, Canterbury, has been dated before the Norman Conquest. Ælfric (c. 955-c. 1020), who made his translation between 997 and 1006 at the instance of a wealthy layman, the Ealdorman Æthelweard, omitted those portions of the Scriptural text that he thought unsuitable for a layman. Otherwise his translation is close and does not rise to the eloquence of the rhythmic and alliterative style which in his sermons marks him as one of the chief masters of Old English prose.

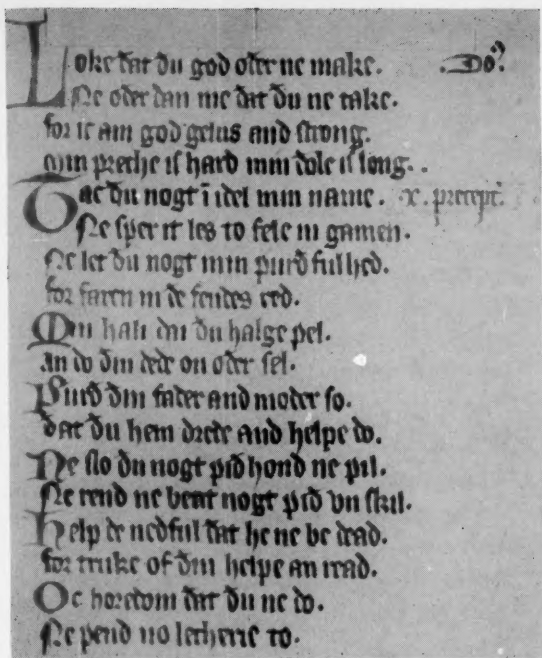
The hand in this manuscript is still Insular, as compared with the Continental hand of Fig. 5. Note the preference of ð over þ, the regular use of 3 for g and þ for w, and the four appearances of the relatively infrequent letter x.

as we shall see, was not silent at the time these spellings were introduced.

g, h, gh

The letters g and h at the beginnings of words usually represent the sounds that they did in Latin and Old English. In words like *gnaw* and *gnat*, however, the initial g disappeared from pronunciation in Middle English, although it was retained in the spelling. The simplification of consonant clusters which produced this change likewise accounts for the disappearance of the initial k sound from words like *knowl-*

edge and *knight*. On the other hand, initial h had ceased to be pronounced in French, and was not pronounced in Middle English in words taken over from French, such as *history*, *hospital*, and *human*. In these



Transcription:

Loke dat ðu god oðer ne make.

Ne oðer dan me dat ðu ne take.

for ic am god gelus and strong.

min preche is hard min dole is long.

Tac ðu nogt in idel min name.

Ne swer it les to fele in gamen.

Ne let ðu nogt min þurðfulhed.

for-faren in ðe fendes red.

Min hali dai ðu halge þel.

An do ðin dede on oðer sel.

þurð ðin fader and moder so.

dat ðu hem drede and helpe do.

Ne slo ðu nogt þið hond ne pil.

Ne rend ne beat nogt þið vn-skil.

Help de nedful dat he ne be dead.

for truke of ðin helpe an read.

Oc horedom dat ðu ne do.

Ne þend no lecherie to.

preche-vengeance

ðole-forbearance

fele-make foul, defile

gamen-games, sport

þurðfulhed-worthyhood, honor

for-faren-go away, perish

red-counsel

halge-hallow

sel-time, season

drede-dread, respect

vn-skil-foolishness, error

truke-lack, failure

read-counsel

Figure 4 is reproduced by permission of the authorities of the British Museum; figure 5 by permission of the Master and Fellows of Corpus Christi College, Cambridge; and figures 6 to 9 by permission of the Trustees of the Morgan Library, New York.

Fig. 5. Part of the Ten Commandments from a metrical paraphrase of Genesis and Exodus in Corpus Christi College, Cambridge, Ms. 444, fol. 68r. The manuscript itself is dated about 1300 A.D., although the text was probably written a half century earlier. The dialect is East Midland—that from which London English later developed—and hence we have little difficulty in reading the piece, despite its early date. Note the continued use of þ for w and of ð for th. These characteristics together with the very slight French influence on the vocabulary point to the survival of the native tradition, while the virtually complete loss of inflections indicates the direction in which the language is developing. The long s, found customarily at the beginnings of words, is found twice at the end of *is* in line 4. Spellings such as *nogt*, *halge*, and *fader* indicate a pronunciation midway between Old and Modern English, that of *boredom* simply the pristine, unbowdlerized spelling.

examples, the h was reintroduced into the pronunciation through the influence of the spelling and of the Latin pronunciation. But in several words it has never been pronounced, for instance, *honor*, *herb*, and *heir*, and the archaic *hermite*. These and other words from French beginning with a silent h have fallen in with

native English words beginning with vowels as being preceded by *an* rather than *a*—*an honor*, *an heir*. This fact has produced one of those errors of the semi-literate rather than the illiterate—*an hundred*, *an habitation*, and the like. Actually, when the h is pronounced, the article *a* has been used since early Middle English.

G's and h's in the middle or at the ends of words have either disappeared or survive as vowels or diphthongs. A g in either of these positions is generally evidence that a word is borrowed, like *big* and *egg* from Danish, or *beg* and *fig* from Old French—but it is dangerous to generalize, for *dog* and *stag* are good native English. In Old English medial and final h and g (except before i and e) had the guttural sound heard in German *ach* and *sagen*. The Norman scribes were not familiar with this sound,

though they were used to the ordinary g and h. To represent the unfamiliar guttural sound, they devised the digraph gh and spelled Old English *bog*, *bough*; *thurb*, *through*; and *niht*, *night*. During Middle English the guttural sound disappeared from pronunciation, and from the spelling of some words, such as *bow* for

Old English *bugan*, and *draw* which is the same word as *drag* save that the latter preserved the *g*; but in other words, the *gh* spelling has persisted to the present time. In a few words the guttural sound became *f* instead of a vowel or diphthong: *enough* which has the archaic variant *enow*, *cough* which once had the plural *conwen*, and *draft* which has the variant spelling *draught* and is really just the past tense of *draw* and *drag*.

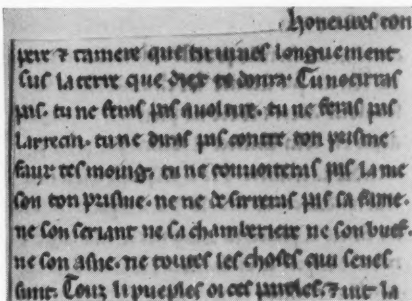
G before *i* and *e* in late Old English already had the sound of consonantal *y*; the *g* of Old English *gear* was pronounced like the *y* in *year*, and that of *ge* as in *ye*. The Old English scribes had used the *y* (redundant in Latin and seldom used) for rounded *u* as in French *lune*, to distinguish it from the unrounded *u* of *dune*. When the rounded *u* disappeared in Middle English, scribes began using the *y* as we do today, both as a consonant—*year*, *you*, *yes*—and a vowel, equivalent to *i*—*by*, Old English *bi*; *tyrant*, Old French *tiran*.

j, dg

The sound represented in Modern English by *j* and *dg* almost never occurred at the beginnings of words in Old English—and not at all in Latin. When it came in the middle or at the end of words in Old English, scribes spelled it *cg*—*hecg* for *hedge* and *brycg* for *bridge*. The *cg* probably originally represented a sound nearer to hard *g* than to *j*, but it softened as time went along. Middle English scribes changed the spelling to *dg* which better represented the palatalized sound, as they did the *g* in a few French words—*judge* from *juger* and *pledge* from *plege*—but not in *rage*, *large*, *sergeant*, and many others.

The hard *dg* sound of *large* and *sergeant* represents the pronunciation of Norman French from which most of our early borrowings come. The sound palatalized further in Central (Parisian) French, to the *g* in French *large* today. Words which we have borrowed

Fig. 6. Part of the Ten Commandments from a French Bible written in France in the thirteenth century. Note the use of *u* for *v*, and how closely the forms of the letters, the spelling, and even the vocabulary are related to English.



Transcription: Honeures ton pere & ta mere que tu uives longuement sus la terre que diex te donra. Tu nocirras pas. tu ne feras pas auoltire. tu ne feras pas larrecin. tu ne diras pas contre ton prisme faux tesmoing. tu ne couuoiteras pas la meson ton prisme. ne ne desirreras pas sa fame. ne son ser[u]ant ne sa chamberiere ne son buef. ne son asne. ne toutes les choses qui seussunt. Touz li pueples oi ces paroles. & uit la . . .

from French since the Anglo-Norman time tend to have the soft *g* sound—*rouge* and *garage*—though even in these, the French *g* tends to be attracted by analogy to the *dg* sound.

Almost all words with initial *j* come from French (*gem* with *g* is found in Old English). In Latin, *i* was used like *y* in Modern English, both as a vowel and a glide consonant. When it was a consonant at the beginning of a word in Old French it came to be palatalized to a *j* sound. However, the letters *i* and *j* were used interchangeably in French and Middle English up into the sixteenth century, with only the context determining the pronunciation. In Middle English, then, the first letters in *inge* and *jn* were pronounced as they are today, in spite of their spelling.

s, z

The letter *s* was used by scribes of Old English to represent the sounds of *s* and *z*, as we use it today in many cases. For instance, although we spell it *s*, plurals and possessives end in the *z* sound whenever they follow voiced sounds: *boys*, *dogs*, *fishes*, as compared with *bats*, *caps*, *racks*. Actually, this *s* is another archaic spelling, dating from Middle English when these inflections were always voiceless. In the oldest French texts of the eighth and ninth centuries, *z* was already used to distinguish the voiced sound, and the Norman scribes introduced it into such words as *freeze*, Old English *freose*, and *dizzy*, Old English *dysig*, where the intervocalic *s* was already pronounced *z*. They also introduced two other ways of indicating the soft *s*: doubling the *s* as in *vessel* or the feminine suffix *-ess*, *mistress*, *poetess*; and spelling it *c* as in *twice*, originally *twies*, and *dice*, Chaucer's *dys*.

sh

The sound represented by *sh* in *shin* probably did not exist in Oldest English. The spelling *sc* in Old

English (*scip*, *ship*, and *fisc*, *fish*) probably at first represented the *sk* sound of *skin*. By the time of the Danish conquest *sc* had already developed the sound of *sh*, however, although the spelling had not changed. In Danish this change in pronunciation had not taken place. As a result, we have in English many doublets, pairs of words distinguished by this difference: *shirt* and *skirt*, *shoot* and *scoot*, *shuttle* and *scuttle*, *shrub* and *scrub* (*oak*), and many more. Old French had neither the sound nor the spelling *sh*, and Norman and Middle English scribes simply invented the spelling, probably on the analogy of *ch*, to distinguish the sound from the hard *sc* in many words from French: for example *scout*, *scorn*, and *scale*.

fore 900 A.D.) this digraph was usually used for the *th* sound at the *beginning* of words; in the middle or at the end, where the sound in English was frequently voiced, it was spelled *d* or *ð*, supposedly in imitation of contemporary Latin pronunciation. The *ð* (called the "eth" or "thed") is not a runic symbol, but simply a *d* with a stroke through the stem to indicate that it is aspirated. Originally, it may have been pronounced somewhat like the uncultivated pronunciation of *this* and *that*: "*d^his*" and "*d^hat*".

After 900 the symbol *þ*, borrowed from the runic alphabet, replaced *th* at the beginning of words and was used interchangeably with *ð* elsewhere. Norman scribes, who were not familiar with the Old English

Fig. 7. Part of the Ten Commandments from the Coverdale Bible, first edition, Zurich, 1535. This version, named for its compiler, MILES COVERDALE (1488-1568), is the first complete English Bible. It is based on the translation of the Greek Testament by WILLIAM TYNDALE, first published in 1526, TYNDALE'S translation of the Pentateuch, and COVERDALE'S own translation of the rest of the Old Testament and the Apocrypha. Like TYNDALE'S Testament, the Coverdale Bible was printed on the Continent because up to 1534 English authorities would not permit the Bible in English to be printed or circulated in England. By the time the Coverdale Bible was published, however, HENRY VIII had broken with Rome (1534); COVERDALE included a flattering dedication to the King, and his Bible was allowed to circulate freely in England. The Tyndale and Coverdale translations contributed much to the phrasing of the Authorized Version of 1611. Note the shape of the *k*, the frequent use of *y* for *i*, and the abbreviations (to save space and justify the lines) of *thy*, small *t* over *y*, and *servaunt*.

Honoure thy father and thy mother, that
thou mayest lye longe in the londe, which
the LORD thy God shal geue the.
Thou shalt not kyll.
Thou shalt not breake wedlocke.
Thou shalt not steale.
Thou shalt beare no false witness a-
gainst thy neighbour.
Thou shalt not, lust after y. n. bears
house.
Thou shalt not lust after thy neighbours
wife, ner his seruaunt, ner his mayde, ner his
ore, ner his Ass, ner all that thy neighbour
hath

The voiced *sh* sound of *vision* has developed in English where *s* comes before *i* or *u*. In words like *illusion* or *measure* the original (French) pronunciation of the intervocalic *s* was *z*, but the raised position of the tongue in pronouncing *i* and *u* has palatalized the *z* to its present voiced *sh* sound. The sound represented by *ch* of *chew* in Parisian French changed to the *sh* of *shoe* after the Anglo-Norman period, and some words which we have taken into the language since Middle English preserve this later French pronunciation—*chateau*, *chagrin*, *chaise*.

th

There were two sounds in Old English that were not clearly distinguished either in the Latin of the Old English scribes or the French of the Normans. These were *th* and *w*. The *th* digraph was, however, found in Latin, although we are not sure how it was pronounced. In the oldest English manuscripts (be-

alphabet and did not have the sound in their own language, began a movement toward restoring the Latin digraph. The *ð* disappeared by the end of the thirteenth century, but *þ* lasted until the beginning of printing.

The earliest fonts of type, imported into England from the Continent, did not, in fact, have the *þ*. In an effort to supply this lack, and also because in the handwriting of the sixteenth century *þ* and *y* were made nearly alike, and perhaps, too, because of the form that the capital *þ* sometimes took, printers—and sign painters—came to use the *y* for *þ*. In *Ye [famous] Olde Tea Shoppe* the first letter represented *th*, and the word was always pronounced *the*. In the few words with *th* brought in from French, the *th* was simply pronounced *t*, as it still is in French. In Middle English manuscripts we find *trone* for *throne* and *teme* for *theme*. The *th* pronunciation was reintroduced in the sixteenth century from the spelling and the Greek originals. But in some words, like *thyme* and *Thomas*,

th still shows the Middle English pronunciation taken from French.

w

The sound represented by the w in *well* gave the Old English and Norman scribes almost as much trouble as *th*. The sound was clearly distinguished in Old and Middle English, as it is today, but not in either Latin or French. In Oldest English the scribes experimented with u and uu, but by about 800 they had adopted the runic symbol þ. The Norman scribes had already met the sound in Teutonic words in Northern French and had adopted the same uu that the English scribes had first experimented with. Hence, the Anglo-Normans discarded þ in favor of their own letter which can be considered either a double u (the English name) or a double v (the French name). The sound in Central French was at first pronounced *gu*

Middle English (like g and k in *gnat* and *know*): for instance *wrestle*, *wring*, and *wright*.

hw

The sound spelled wh in Modern English was in Old English spelled hw: *hwæl* for *whale*, *hwæt* for *what*, and *hwy* for *why*. The letters were reversed by the Middle English scribes, partly, perhaps, because there came to be less stress on the *h*—the aspiration. This aspiration has grown milder and milder since Middle English until today the "*wich*" and "*wy*" pronunciations are accepted in standard British, and used a good deal in colloquial American. On the other hand, in *who* and its derivatives (*whose*, *whom*) the *w* part of the combination has been lost in pronunciation, although it has been retained in the spelling. This has given rise to several analogical spellings for words which have never had a *w* in their pronunciation: *whole* from Old English *hal*, cognate with *hale*; *whoop* from Old French *houper*; and *whore* from Old English *hōra*.

x

The sound of *x* occurred much less frequently in Old English than it does today because the Greek borrowings had not yet arrived and because the plurals of the many words ending in *k* (*c*) were still two syllables: *rockēs* for *rocks* and *backēs* for *backs*. But where the sound did occur in Old English, it was usually spelled *x*—*fox* was *fox* and *wax*, *weax*.

The Vowels

The spelling of the vowels in Modern English is not nearly as close to that of their Old English and Latin ancestors as

the spelling of the consonants, but their real confusion dates only from the fifteenth century. In Old and Middle English, the vowels *a*, *e*, *i*, *o*, and *u* represented virtually the sounds that they did in Latin and do still in all the European languages, and they had the same distinctions in length without change in quality that they had in Latin. What changes there are in spellings of vowels between Old and Middle English usually represent actual changes in pronunciation. Like the consonant changes we noted above, they had been underway in Old

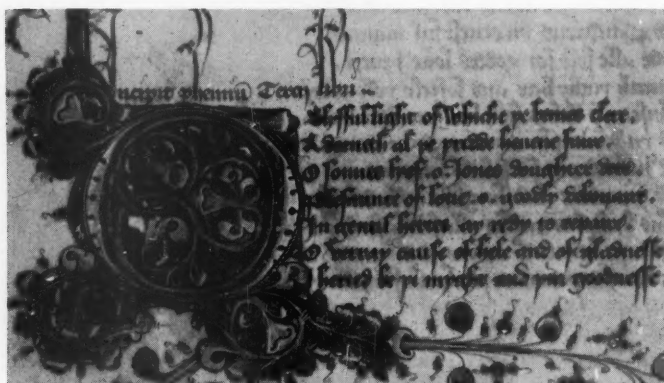


Fig. 8. The beginning of Book Three—"O blyful light of whiche þe bemes clere"—of Chaucer's *Troilus and Criseyde* from a handsome fifteenth-century manuscript in the Morgan Library, New York. These lines show the continued use of the thorn and the closeness to French of the spelling and the hand. They also illustrate the effectiveness of manuscript hand with illumination.

and spelled *gu* as in *Guillaume* for *William*, *guerre* for *war*, and *guêpe* (the accent indicating the lost *s*) for *wasp*. Eventually, as with *qu*, the *u* was lost in pronunciation, and the sound became a simple *g*. But we in English have several doublets, one representing the Teutonic form from Old English or Anglo-Norman and the other the French: for instance *ward*, *guard*, and *wile*, *guile*.

In Old English, an initial *w* before a consonant was pronounced, and it persisted in spelling sometimes even when the consonant cluster was simplified in

English, but had not been recorded in the spelling. When the words were respelled by the Norman scribes, they used the vowel letters that represented contemporary pronunciation.

Throughout the Middle English period when Latin and French were the official written languages, everyone who wrote English tended to write it as the missionary writes African, making the spelling indicate his own pronunciation. Hence, in Middle English there was the greatest diversity in the spelling of English in various parts of England, diversity which represented diversity in sound. When a northern man spelled *home*, *ham*, and a southwestern man spelled *sin*, *sunne*, it was not because the symbols had different phonetic values in different districts but because they pronounced these words differently.

Two Old English vowel letters need to be mentioned especially. One, *æ*, represented a sound still found in English, the *a* in *bat*. The other, *y*, represented a sound that has been lost, the rounded *u* of French *lune*, mentioned above. Both the letters *æ* and *y* were taken from the Latin alphabet, but they represented adaptations rather than matching of the sounds. The Latin *æ* apparently had a sound somewhere between Modern English long *i* (*ice*) and a flat *a* (*bat*). French did not have the long *i* diphthong, and it spelled the flat *a* sound *ai*: *main* and *plain* in Old and Modern French, which came into English with the same spelling (though the pronunciation changed in the Great Vowel Shift, as we shall see below) and by analogy produced the spellings of the native English *rain* and *maid*. French, therefore, had no need for the *æ* digraph, and Norman scribes did not use it in their transcription of English. This has led to much discussion of the actual pronunciation of words like *and* and *that* in Middle English. They had been spelled with *æ* in Old English, but the Middle English scribes did not spell them *ai*. Hence, some believe that they were pronounced with flat *a* in Old English, became broad *a* (the Boston *a* in *grass*) in Middle English, and changed back to the Old English pronunciation in Modern English. However, it is obvious that the flat *a* or flattish *a* was spelled simply *a* in French words like *dame* and *fame*.

As we said before, *y* was found only in foreign words in Latin, where it was derived from the capital form of the Greek upsilon. In Greek, upsilon could

have the sound of either the rounded *u* (French *lune*) or the unrounded *u* (English *dune*), and Old English scribes, probably with some knowledge of Greek—it could hardly have been by chance—adapted the *y* for the rounded sound and *u* for the unrounded. French, like Latin, had only one *u* sound, but it was the rounded *u* instead of the unrounded *u* of Latin. So the Old English *y* represented the sound that the Norman scribes were in the habit of spelling *u*. The history of the rounded *u* sound in Middle English is complicated, but it does seem that early in the period the Anglo-Normans tended to use plain *u* for the rounded sound in all words from the French (naturally) and in English words where it persisted. In the Northern dialect, from which standard Modern English pronunciation developed, the rounded *u* (*y*) developed into *i*, as in *kin*, Old English *cynn*, or *pit*, Old English *pytt*. The unrounded *u* of Old English the Middle English scribes tended to spell *ou*. Thus the spelling which we associate with the diphthong in *house* and *mouse* did not originally indicate a diphthong at all, but rather the Middle English pronunciation “*hoose*” and “*moose*.” There was never any real uniformity in this distinction between the *u* and *ou* spellings, however, as there has been none in the change of the *ou* to *ow* which seems to have begun when the unrounded *u* be-

Fig. 9. Part of the title page of FRANCIS QUARLES'S *Argalus and Parthenia*, printed in London in 1632, showing the continued use of the *y* for *th* in printing.



gan to diphthongize in the Great Vowel Shift.

AT THE END OF the Middle English period, between about 1400 and 1550 (the dates are subject to hot debate still), the quality of all the long vowels in English played musical chairs in the change that has been called the Great Vowel Shift and which has produced most of the chaos in the spelling of our vowels today—especially in the eyes of Europeans in whose languages this change did not take place.

There were seven long vowels in Middle English:

the *a* of *alms* which in the Great Vowel Shift became the *a* of *name*; the close *e* of *they* which became the *e* of *be*; the open *e* of *ere* which became the close *e* (spelled *ea*) in SHAKESPEARE'S time, and later the *e* of *sea*; the close *o* of *home* which became the *oo* of *spoon*; the open *o* sound of *awe* which became the close *o*; the *i* of *machine* which became the diphthong of *ice*; and the *u* of *dune* which became the diphthong *ou* of *down*.

As a matter of fact, there was already confusion in the spelling of vowels in Middle English, a confusion inherent in the fact that all of the European vernaculars had or developed more vowel sounds than the five simple vowels of the Roman alphabet provided for. Various languages have solved the problem by means of accents and digraphs. In Middle English there were two serious confusions: the open and close sounds for long *e* (*sell* and *sail*) indicated by the same spelling, and the open and close sounds for long *o* (*awe* and *owe*) frequently spelled the same. These distinctions had not been recognized in Old English spelling, besides which Old English had had the long *æ* which approached (and developed into) the open *e* sound. But in Middle English Chaucer could not rime *sweete* (rimes with *mate*) and *heete* (rimes with *met*) or *tree* (rimes with *say*) and *see* (modern *sea*, rimes with *eh*), in spite of their identical spellings. In Shakespeare's time these sounds still did not rime. The close *e* of *sweet* had become what it is today, but the open *e* had simply become the close *e* (*great*), a sound which it still retains to some extent in Irish pronunciation. The *ea* spelling was confined in the sixteenth and seventeenth centuries (it had existed in Middle English) to the close *e* sound. POPE still distinguished the two sounds, for instance in the famous lines from *The Rape of the Lock* about Hampton Court:

Here though, great Anna! whom three realms obey,
Dost sometimes counsel take—and sometimes tea.

But the sounds fell in together during the eighteenth century. Some confusion in spelling still arises from the fact that occasionally Middle English short *e*'s (as in *let*) were spelled *ea* and also that a good many long open *e*'s have come down with their sounds unchanged. For instance we have *dead*, with the Elizabethan pronunciation "*daid*" still alive in the colloquial vulgate; and NOAH WEBSTER ardently supported the regularly shifted pronunciation "*deef*" for *deaf*. There are a few words in standard English, like *great* and *steak* which preserve the Elizabethan pronunciation. In ad-

dition, there is the archaic spelling of the past tense of *read* (rimes with *red*) which might be expected to be spelled with a short *e* like *led*, since their shortening in the past tense in Middle English by analogy with verbs like *creep-crept* and *sweep-swept* (where the *pt* caused shortening) is identical.

The open and close *o* sounds had produced identical spellings in Middle English for words like *rote* and *mone* (modern *root* and *moon*) and *hope* and *note* (which then had the vowel sound of modern *nought*). On the whole, however, this confusion has been reduced in Modern English by confining the simple *o* to the sound in *note*, and using the double *oo* for the shifted *o* of *moon* (which is really the unrounded *u* sound). Thus we have few cases like *shoe* and *sloe* in which there is genuine confusion.

WHEN THE WRITTEN language began to be standardized around the writing of the court and the government in the London of Chaucer's day (before 1400), the Great Vowel Shift had not greatly affected spelling or pronunciation. CAXTON and his successors, when they began to print (about 1476), set type from manuscripts written with this fourteenth and early fifteenth century spelling, and based their own spelling upon it. CAXTON was aware of the confusion in spelling and pronunciation in his own day, but he was, after all, a practical printer who wanted to please his public, not a language reformer. He and his successors did some adapting, like regularizing the use of the *ea* and *oo* as mentioned above, but for the most part they set in type and passed on to us the spelling of the fourteenth and fifteenth centuries.

The most important adaptation that the printers and writers at the beginning of the sixteenth century made was to use the final *e* as a means of indicating the pronunciation of vowels that had undergone the Great Vowel Shift. As late as Chaucer's time, the final *e* was still a rudimentary inflectional ending left over from Old English when the language had been fully inflected and pronounced like the final *a* of *sofa*. But it was already beginning to be slurred off in pronunciation, as Chaucer's prosody and the carelessness of scribes in using it prove. Hence, in the manuscripts which CAXTON used, a great many words had final *e*'s which by his time were never pronounced. These *e*'s were, therefore, used to indicate the new, shifted long vowels—to show that the vowels of *sit* and *sie*, *bat* and *hate*, and *met* and *mete* did not simply differ in quantity, but that they were completely different.

AMONG THE ANNUAL PUZZLES THAT CAME TO MY DESK while curator of archaeology at the United States National Museum, few have intrigued me more than that of the three cicada whistles. Like dozens of other curiosities, they were sent in for identification and appraisal but, to heighten the mystery of these three, they came from three separate states, Missouri, Virginia, and North Carolina, and all within a span of ten years. They were, and still are, puzzling for several reasons: they are almost identical in size and shape; all three were surface finds, two on farms and one in a village garden; although differing insignificantly in detail, each was made of buff-colored clay in a two-piece mold and subsequently fired; all were regarded by their finders as the work of American Indians, which they are not. Within my experience, neither earthenware whistles nor two-piece molds may be recognized as products of pre-Columbian Indian peoples living north of the Valley of Mexico.

The finders of these three described them as cicada whistles and I can do no better. Each produces a single note and shows an extended proboscis under the head but, otherwise, every entomologist would find fault with the representation. The wings are too short and leave the abdomen exposed. If a moth is portrayed, we are still at a loss to say which one. I prefer to believe the sculptor had a cicada in mind and that the segmented posterior and foreshortened wings, like the two extra pairs of legs, are merely artistic licenses we must grant without protest.

THE FIRST OF THE three whistles was received at the National Museum early in March, 1931, mailed with the permission of its owner by A. C. BURRILL, Curator of the State Resources Commission, Jefferson City, Mo. In an earlier letter Mr. BURRILL reported that the specimen "was plowed up by Mr. L. V. MORROW [the owner] in breaking the ground of an old orchard his father had planted in virgin prairie sod years ago in Cole County, Missouri, near Russellville." Length of the whistle was given as "about three inches." To my present chagrin, I made no notes at the time of examination and we never received Mr. MORROW's reply to an inquiry regarding the date and circumstances of discovery. That the finding occurred prior to the autumn of 1927 is apparent from Mr. BURRILL's first letter, in which he mentions his fruitless search for a comparable item. Russellville is situated in central Missouri, a few miles southwest of Jefferson City.

The second cicada whistle, that from Virginia, was first described to me verbally by museum visitors in

THREE CICADA WHISTLES

By Neil M. Judd

Associate in Anthropology, U. S. National Museum.

This paper is published with the permission of the Secretary, Smithsonian Institution.

late August, 1935. A few days later Mr. ROBERT BARCLAY, a jeweler of Newport News with whom the curio had been left for sale, mailed it to the National Museum together with the information it had been found by RUSSELL E. FOX on the surface of a farm field one and one-half miles from the James River in Elizabeth City County, five miles west and a little north of Hampton or, more precisely, one mile due west of Little Bethel Church, on the Yorktown Road. Mr. BARCLAY added, "We find quite a lot of Indian relics on the peninsula, all of which are surface finds." Since Mr. FOX was not interested in "Indian relics" his cicada whistle was acquired, through the courtesy of Mr. BARCLAY, for the national collection.

AS MUSEUM PROPERTY this particular example could be subjected to closer scrutiny than would otherwise have been permissible. I had hoped the clay from which it was made might possess some distinctive quality that would serve to identify the source but it did not. Scratches here and there, perhaps cuts from a wire nail during cleaning, afforded fresh surfaces for microscopic examination but these revealed nothing important. The geologists whom I consulted pointed out a conspicuous quartz pellet embedded in the mid-

dle left wing and lesser inclusions of the same rock elsewhere. Such fragments, however, their edges rounded by water action, might occur in any clay bank. The clay itself was just buff clay and, moreover, it had been altered in the molding process and by subsequent firing in the kiln. No one could say where that clay had been quarried although the buff color, I am informed, might identify it with the middle eastern United States.

Viewed from above, the Virginia whistle exhibits a slight asymmetry or want of balance. The right wing is shorter than the left; both eyes protrude, a characteristic of the cicada, but the left is more conspicuous because the right, nearer the middle of the head than is normal, has been pressed down. One notes a

this vent was transversely oval and measured three-eighths of an inch by one-quarter but its lower edge was broken away at some time and the upper left margin has more recently been cut with a steel tool. In consequence, the whistling mechanism and part of the modeling technique are revealed. The air passage, which is three-sixteenths of an inch wide at the mouthpiece, slopes to a width of three-eighths inch and terminates with a lip or platform three-eighths of an inch high. Imprints of a knife-thin edged tool were left on the face of the platform and at either side within the air passage. Through both the vent and the accidental dorsal hole the chamber is seen to be relatively smooth and thin-walled. These factors clearly evidence manufacture in a two-piece mold but, if further proof were needed, it is to be found in the partially obliterated mold seam around the exterior.

Maximum measurements of the Virginia whistle are two and nine-sixteenths by one and seven-sixteenths by thirteen-sixteenths inches. Thus its length compares favorably with that of the living giant cicada but this may be purely coincidental. Having no finger hole, the whistle emits only one shrill note—unless it be possible to vary this by volume or by lingual control. There are those who detect a similarity between this one note and the

vibration pitch produced by the male cicada but I must admit my shortcomings as a naturalist. Legs and the cicada-like beak, extended back under the head, were provided for in the mold but the abdominal segments and lines on the wings to suggest veins were incised after removal from the mold and while the clay was still plastic. Some of these incisions have been re-traced recently, doubtless during thoughtless haste to clean the specimen.

We turn next to the third cicada whistle, that from North Carolina, and the only one for which we have a written statement from the finder. Attention was first directed to the find by Miss ELAINE MOSES who wrote from Western Carolina Teachers College February 14, 1939, to tell the Smithsonian Institution of the discovery and the curiosity it had aroused locally. "It has been molded by hand," wrote Miss MOSES, "and then baked. A few finger prints can be seen dimly. It was found near an old Cherokee Indian village site on the

Dorsal and ventral views of the three cicada whistles.

Top, the first example, owned by L. V. Morrow, found before 1927 at Russellville, Missouri.

Middle, the second whistle, owned by the National Museum, found at Hampton, Virginia, in 1935.

Bottom, the cicada whistle owned by W. R. Cotter who found it in his garden at Cullowhee, North Carolina, in 1939.

slight indentation on the forward edge of the right wing. Immediately behind the thorax and slightly off the median line, is a hole accidentally broken through some time ago. Its edges are worn and discolored and, although possible, it seems unlikely this condition



was brought about by a covering finger of the one who first carried and sounded this whistle.

The mouthpiece is at the posterior and the vent, on the under side midway of the abdomen. Originally

Photographs from the Smithsonian Institution.

Tuckaseigee River at Cullowhee." Later Miss MOSES added that the whistle belonged to W. R. COTTER who had found it a month earlier and who was mailing it for examination. "The garden where he found it has been in cultivation since 1908. He picked it up on the surface of the ground and there were no other relics with it." Cullowhee is located in Jackson County, approximately forty miles southwest of Asheville.

Under date of March 27 Mr. COTTER replied to a direct inquiry. "Yes, I personally found the whistle. I found it in my vegetable garden one afternoon. I was walking leisurely along and, glancing down, there it lay with the top of the wings fully exposed. . . . I picked it up thinking it was a fragment of Indian pottery (which is very plentiful in some fields in this country) and of course discovered what it was. There were no more relics near it. I have never found any Indian relics in this garden before, with the exception of a few flint arrowpoints. . . ." The garden lay half a mile from Cullowhee postoffice and fifteen feet from Highway 106 on the way toward East Laport. These statements contain all the information one could rightfully expect under the circumstances but they fail to answer two pertinent questions: Who made the whistle and how did it get into Mr. COTTER's garden?

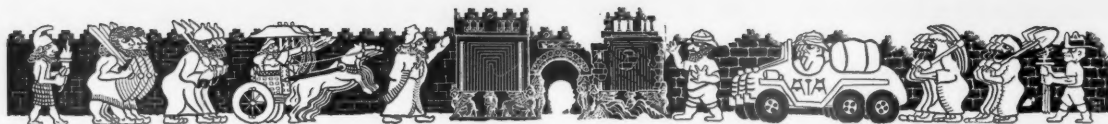
TWELVE YEARS HAD passed before I finally found opportunity to compare notes and photographs of these three whistles. The one from Virginia measures $2\frac{9}{16}$ by $1\frac{7}{16}$ by $1\frac{3}{16}$ inches, the North Carolina specimen measures $2\frac{5}{16}$ by $1\frac{5}{16}$ by $1\frac{1}{16}$; and the Missouri whistle is described as "about three inches long." This latter is the more expertly modeled of the three and has suffered less at human hands. That from North Carolina exhibits haste or carelessness in separating it from the mold. From the dorsal aspect, both head and posterior have been bashed in; the abdominal segments are less clearly defined; the wings have been fused along the median line and the left, in contrast to the Virginia whistle, is shorter than the right. Cracks appear above and below, as though the paste were too

dry when pressed into the mold and the vent is farther from the mouthpiece than on the other two.

The three are so nearly of a size that they could conceivably have been cast at the same time and by the same hand. Negligence in handling the moist image before firing would account for most, if not all, visible irregularities. Two of the three were found on the surface of the ground; none was accompanied by other artifacts. The one from North Carolina comes from a district inhabited by Cherokee Indians within historic times but it is not a Cherokee product. Like most other North American tribes, the Cherokee made flutes of wood, whistles from bones of the eagle or turkey. I recall no instance of an earthenware whistle from a prehistoric village site anywhere in the United States. Travellers of the sixteenth and seventeenth centuries repeatedly mention drums and rattles but rarely any kind of wind instrument. One-tone bone whistles are still employed by priests of some tribes to represent the voices of supernatural beings; recovered from ruins, they have often been described as "bird calls." Earthenware whistles modeled in the form of birds and mammals are well known from Middle America and especially from the Province of Chiriqui, Republic of Panama. Most of these creations reflect artistic ability and skill of a high order. Some are so conventionalized they defy identification of the creature portrayed but I never saw one that even remotely resembled an insect.

OUR THREE CICADA whistles were not made by prehistoric American Indians, of that I am positive. They look to me suspiciously like a fairly recent commercial product, designed for the "five and ten" trade or something on that level but every likely manufacturer or distributor of whom I have inquired (nine in number) disowns the three. The North Carolina specimen was recovered in a kitchen garden fifteen feet from a State highway—the triumphant discard, one suspects, of a parent who had heard little all day long but the monotonous tweeting of that simple clay toy.

ARCHAEOLOGICAL INSTITUTE OF AMERICA • FIFTY-THIRD ANNUAL MEETING
PRINCETON, NEW JERSEY • DECEMBER TWENTY-SEVENTH TO TWENTY-NINTH



ARCHAEOLOGICAL NEWS

James A. Kelso, 1873-1951

We regret to report the death, on November 3, 1951, of JAMES A. KELSO, president emeritus of Western Theological Seminary, Pittsburgh, Pennsylvania, a member and former officer of the Pittsburgh Society of the ARCHAEOLOGICAL INSTITUTE OF AMERICA, and a lifelong student of the archaeology of Palestine.

In Dr. KELSO's obituary, the meticulous *New York Times* published a biography which hopelessly confused the professional careers of JAMES A. KELSO and JAMES L. KELSO. By a chain of coincidences, JAMES A. KELSO and JAMES L. KELSO both were ordained Presbyterian ministers; both taught at Presbyterian theological seminaries in Pittsburgh's North Side, JAMES ANDERSON at Western, JAMES LEON at Pittsburgh-Xenia, which face each other across a small park; both taught the same subjects; both were members of the A. I. A. and the American Oriental Society; both were active in support of the American School of Oriental Research in Jerusalem. Their academic neighbors at Pittsburgh distinguished them irreverently as WESTERN KELSO and XENIA KELSO. But they were not related.

JAMES L. KELSO, who in a letter of December 3 affirmed his continued good health, was director of the Jerusalem School in 1949-50 and president of the Board of Trustees of the Palestine Archaeological Museum, and wrote for ARCHAEOLOGY an account of the museum which appeared in Volume 3, Part 2 (Summer 1950), pages 66-68. His description of his work at Jericho, illustrated with his own excellent photographs of actual excavation scenes, appeared in the December 1951 number of the *National Geographic Magazine* ('Ghosts of Jericho,' pages 825-844).

Cairo Center

Newsletter Number Three of the American Research Center in Egypt

transcribes a long letter from the present director, WILLIAM STEVENSON SMITH, giving the news up to a date in October. We quote one paragraph of particular interest:

"I have succeeded in completing tracings of a large series of fragmentary blocks which once decorated the temple of King Weserkaf, the first king of Dynasty V in the Old Kingdom. Although terribly smashed, these constitute the earliest body of royal reliefs of any size and it has been possible to reconstruct an amusing scene of men energetically paddling a large boat. Each group of men works in rhythm, some raising their paddles high in the air and others leaning far down over the side of the boat in an unusual example of arrested movement. There is also a charming example of a rare scene of bird snaring in an orchard which can be put together from various fragments. One block turned out not to belong to Weserkaf at all and provides us with the name of a Queen Khent-kaw-s. She may prove to be a second lady of this name and not the much-discussed builder of the so-called 'Fourth Pyramid' at Giza as I had at first thought. Even more curious are two other blocks which one would have taken to be typically Old Kingdom in style but which show the famous son of Rameses II, Prince Kha-m-waset. He is known to have taken a particular interest in the Saqqara Cemetery and we seem to have here a most intriguing example of alterations made to a temple built some twelve hundred years earlier than the time in which the prince lived. Such an early example of 'archaeological' interest is in keeping with stories about Kha-m-waset. Jean-Phillipe Lauer, the Government Architect at Saqqara, is completing the study of the Weserkaf Temple which was begun long ago by Cecil Firth in 1928. It is hoped that the drawings of the reliefs can be employed in a publication by the Antiquities Department of this valuable material."

In addition to his other obligations, Mr. SMITH has undertaken the editorship of the 'Near East Archaeological

News' for the AMERICAN JOURNAL OF ARCHAEOLOGY. He also attended the International Congress of Orientalists in Istanbul in September:

"There were two weeks before the Congress and a few days afterwards in which to see again most of my Turkish friends and to enjoy at leisure the many fascinating things to be seen in Istanbul. I should particularly like to acknowledge the courtesy of Bay Aziz Ogan, the Director of the Archaeological Museum, who showed me the alterations which he is making in that building. The old wooden roof is being replaced by fire-proof materials and the small objects on the vast upper floor must now all be put back in place. Structural repairs are also being undertaken in the Cinili Kiosk which is to be made into a museum devoted to the time of its builder, Mohammed the Conqueror. The other small building across the courtyard contains the collections of the Ancient Orient brought here from sites the mere names of which cast a certain spell from the romantic days of early archaeology: Carchemish, Boghazköy, Assur, Babylon, Nippur, Telloh. Surely it would be hard to find such a picturesque cluster of museum buildings laid as they are about a courtyard terrace above the old trees of the palace gardens which fall away to the Golden Horn. Ancient stones have been casually arranged amongst trees and shrubbery. The sunlight flashes back from the bright tiles of the Cinili Kiosk contrasting with the sombre masses of porphyry imperial sarcophagi, while dark basalt Hittite lions stare stonily at the fantastic tree forms of Byzantine columns. It is this courtyard which really prepares the visitor for the strangely compelling beauty of the justly famous 'Alexander Sarcophagus.'"

M. A. A.

The twenty-seventh annual meeting of the Mediaeval Academy of America will be held at Boston, Massachusetts, on April 25 and 26, 1952.

To Subscribers

Effective January 1, 1952, ARCHAEOLOGY's Business Office will be moved to Andover Hall, Cambridge 38, Massachusetts. Please write directly to this address when renewing a subscription. At the same time, to insure prompt delivery, include the postal zone as part of your address. This request from the postal authorities may soon become mandatory.

Aleutians Expedition

THEODORE P. BANK, II, has written from Ann Arbor as of November 27, 1951, concerning the University of Michigan expedition to the Aleutian Islands, of which he is field director:

The University of Michigan has sponsored for the past four years a continuous program of anthropological and botanical field work in the Aleutians. Beginning in 1948, the project has been co-sponsored by the Office of Naval Research and the Michigan Memorial Phoenix Project. Associated, aside from the writer, who acted as leader, have been A. C. SPAULDING, J. F. BANK, W. R. HURT,

H. A. MILLER, D. S. MCCLAIN and L. H. JORDAL.

Field investigations were undertaken on more than twenty Aleutian islands and in five Aleut villages. Major archaeological excavations were completed at Agattu and Unalaska, and in addition most of the known Aleut burial caves were revisited for excavation of levels below those previously sampled by DALL, JOCHELSON and HRDLICKA.

A number of interesting correlations between anthropological and botanical data have resulted. Phytoecological studies of prehistoric village sites indicate a close correlation between former Aleut plant uses and present day vegetation and a possible correlation between the latter and age since abandonment of such sites. Ethnobotanical studies have shown the old Aleut plant lore to be more extensive and important to Aleut culture than has previously been supposed. At Unalaska, two deep sites separated by only a few miles of water produced artifacts which appear to be representative of different cultures.

Aside from botanical and archaeo-

logical studies, the expeditions completed ethnological studies in the present day villages. Medical and economic data are available for a close analysis of the trends of Aleut acculturation. Plant, animal, and place names fully annotated with actual Aleut names provide a basis for linguistic comparisons among the various Aleut dialects and between Aleut and Eskimo.

The 1951 expedition returned to Ann Arbor only a few weeks ago. Material is being studied at the University of Michigan and by specialists at other institutions. Ethnobotanical samples are being dated by the University of Michigan radiocarbon laboratory.

Kramer to Turkey

SAMUEL NOAH KRAMER, professor of Assyriology at the University of Pennsylvania, received a Fulbright award for research in Turkey and is now at Istanbul, where he is collating clay tablets and fragments, in the Sumerian script and language, found at Nippur a half-century ago by a University of Pennsylvania expedition.

The Society for the Promotion of Hellenic Studies

President: Professor T. B. L. WEBSTER, F. S. A.

Founded in 1879 to advance the study of Greek language, literature, history, and art in the Ancient, Byzantine, and Neo-Hellenic periods

The Society publishes annually the *Journal of Hellenic Studies*, holds quarterly meetings, and, conjointly with the Society for the Promotion of Roman Studies, maintains a library.

The annual subscription of £2 entitles Members

to receive the current issue of the *Journal of Hellenic Studies*,
to use the Library,
to attend all meetings of the Society.

For particulars apply to the Secretary of the Society,

50 Bedford Square • London, W. C. 1, England

Epigraphic Congress

The second International Congress of Greek and Latin Epigraphy will be held at the Collège de France, Paris, from April 15 to 19, 1952, under the presidency of LOUIS ROBERT of the Collège de France. Enrollments and requests for information may be addressed as follows:

M. LOUIS ROBERT,
31, Avenue du Parc Montsouris,
Paris (XIV^e), France.

The first congress was held in Amsterdam in 1938.

Life in a Rain Forest

Described by its creators as a landmark in the progress of museum display techniques, the American Museum of Natural History's exhibition of "Men of the Montana; a story of life in the Peruvian rain-forest," was opened on November 28, 1951.

In this first major showing in the United States of ethnological material from the Amazon, full use is made of lighting, color, sound, and careful selection and arrangement of the materials, to enhance the effect of the culture of the area. The nucleus of the exhibition is the collection, numbering several thousand items, assembled by RAUL DE LOS RIOS during a twenty-five-year residence on the eastern slopes of the Andes, and obtained for the museum by the late FRANCIS ADAMS TRUSLOW.

Among the unusual techniques employed are the use of free-standing figures placed in open jungle settings created of actual liana vines brought from Peru. At one end of the hall a fisherman on the beach at the edge of the jungle mends his net, while among the tangled vines and tropical foliage of the other jungle setting a warrior, bow and arrow in hand, stalks his enemy.

Headhunting, fishing, farming, hunting, weaving, and the ceremonial rites of the Indians who inhabit this inaccessible area on the upper Amazon are depicted against a stylized simulation of the Montana. Figures, designed in the manner of fashion mannequins, represent the activities peculiar to these natives. A Yagua man shoots a blowgun, while a Conibo man and woman, both dressed in full ceremonial costume, are shown ladling beer from a large earthenware pot into a drinking gourd.

The use of sound as a display technique is unique in that this is the first time the sounds of a region have been represented naturally. Peepers and tree frogs, giant frogs and howler monkeys announce the impending rain in a wild cacophony. Sounds of other animals are heard in a minor key while it is raining very hard. When the rain recedes, the visitor hears the thunderous crash of falling branches which startle the animals and provoke the screaming of monkeys and squawking of macaws. The plaintive cry of the bell-bird, the melodic coloratura of the toucans, the conversational calls of the crested guans, and the eerie wail of the howler monkeys are part of the fusion of sounds that pervade the hall.

With the co-operation of MOSES ASCH of Ethnic Folkways Records, two different records were prepared especially for the exhibition, one with a background of falling rain, communicating the different phases of a rainstorm, the other a condensation of the sounds one would hear on a sunny day. They are played continuously from speakers located at various points in the hall.

Under the general direction of HARRY L. SHAPIRO, chairman of the museum's Department of Anthropology, the exhibition was designed by KATHERINE BENEKER and documented under the supervision of HARRY TSCHOPIK, JR.

Aelurolaters

The prehistoric inhabitants of Peru's northern coast, whose religion and art centered in the great cat god whom they worshiped, are described by RAPHAEL LARCO HOYLE, director of the Museum of Archaeology at Trujillo, Peru, in a handbook in the Smithsonian Institution's series on South American Indians. Most advanced of these people, probably vaguely related to the Indians who developed the Inca civilization in the Andes, were the Mochicas.

Presumably this cat god started as a local deity, but among the Mochicas he was elevated into a supreme divinity. He is shown in Mochica art as a man with great fangs, a wrinkled face, and catlike whiskers spreading from the nose.

This supreme god, Dr. LARCO says, apparently was considered as ruling the destinies of the world, but he lived like

people and could reveal himself both as a man and as a god. Numerous pottery vessels show him receiving sacrificed human beings who are being thrown from a high cliff. He sits at the foot of the cliff, receiving the blood of the victim as a precious offering.

He is shown in other pottery designs as a farmer shelling corn, as a fisherman in a small balsa boat, as a doctor, and as a musician and a hunter. He is pictured also holding up the rainbow in the form of a two-headed serpent, and as a god of war whose intervention is necessary for victory. An anthropomorphic lizard is his servant and a dog his faithful friend. A cormorant attends him while fishing, propelling the balsa boat. A sea eagle, appearing like a human figure, is the messenger who brings him the blood of the sacrificed. As a personification of good, he fights demons, pictured as vampire bats in the form of men, sea demons, a two-headed dragon with one head set in his tail, and a serpent with ears. When he returns wounded from his contest with the demons, he is attended by buzzards and falcons.

The great number of pottery vessels depicting religious scenes or beings, according to Dr. LARCO, indicate that the life of the Mochica people was strongly interwoven with nature worship.

Perhaps the most remarkable development of the Mochica culture, as depicted in their pottery designs, was in surgery. They knew a good deal about amputation, and used circular knives for the removal of tumors. In amputating arms and legs they used great care and precision, cutting the bone above the flesh incision in order to yield a healed stump. A femur and ulna have been found which show a perfectly healed fracture, indicating that these Indians knew how to set broken bones.

Jerusalem School

The American School of Oriental Research in Jerusalem has as director for 1951-52 Professor WILLIAM L. REED of Texas Christian University, Fort Worth, Texas, and as annual professor Dr. A. DOUGLAS TUSHINGHAM. Professor SIRARPIE DER NERSESSIAN of Dumbarton Oaks is Honorary Visiting Lecturer.

The director of the Baghdad school

is again Professor ALBRECHT GOETZE of Yale University, and the annual professor is Dr. FRANCIS R. STEELE of the University of Pennsylvania.

Panafrican Prehistorians

The second Panafrican Prehistoric Congress will be held at the Musée du Bardo, Algiers, from Monday, September 29, to Saturday, October 4, 1952. Enrollments and requests for information may be addressed as follows:

M. LIONEL BALOUT
Secrétariat du Congrès Panafricain de
Préhistoire
Laboratoire du Musée du Bardo
3, rue F.-D. Roosevelt
Alger, Algérie.

The Kensington Stone

Runic inscriptions on the much-discussed Kensington stone, supposedly left in central Minnesota near the middle of the fourteenth century by a band of Norse adventurers, have been subjected to an intensive critical examination by Dr. WILLIAM THALBITZER, Danish ethnologist and one of the foremost living authorities on runes. (See *ARCHAEOLOGY* 1.116-117, 3.186.)

The runes are clearly carved and easy to read—altogether too easy, it seemed to runic scholars at first. Even aside from the grammar, there were reasons to doubt its authenticity. It was known that there had been in the district about the time of the discovery a Swedish schoolteacher, an unfrocked clergyman, who had been a friend of OLOF OHMAN, who found the stone in

1898. He was said to have had a Swedish textbook in which a runic alphabet was printed. Since there are some words in the inscription surprisingly similar to English, it looked at the time as if it were the work of a clever but rather unscrupulous man with no expert knowledge of runes or of the old Norse or Icelandic languages.

Dr. THALBITZER also reports on a runic stone of roughly the same period found on the small island of Kingtorssuaq ten miles north of the present village of Upernavik in West Greenland—presumably left by another exploring expedition. No doubt ever has been raised as to the genuineness of that stone. Its language tends to support the authenticity of the Kensington stone.

Hitherto Dr. THALBITZER, together with most other Scandinavian runic experts, had considered the stone as fraudulent. But after the present study, and in the light of later discoveries, he reports: "I cannot but waver in my doubt. . . . It seems to me that, after all, the inscription may be authentic." Dr. THALBITZER's report on his more recent analysis of the runes which

ELEGY ON A NORTH AFRICAN ROMAN RUIN

The sun glides down the afrikanisch sky,
The wheat tops shimmer in the breeze of eve,
The quadratarius lays his mallet by,
Les colons feed their patient cheptel vive.

Der Töpfer stops the spinning of his wheel,
Textrices still the clacking of their tela,
The workmen seal the last few jars of huile
And hang their smocks upon the senam's prela.

The hungry fowls surround the vilica,
The last late buyer haggles in the souk,
The public slaves sweep the basilica,
The camels wheeze and sneeze in the fondouk.

At lengthy last the village Cicero ends,
The curiales turn their footsteps home,
Out past the pharos Caesar's legate sends
Getreideschiffe on their way to Rome.

O happy scene of plenty and of peace,
Where land and man are partners nel lavoro!
O that these quiet joys might never cease,
Nor l'âge de fer succeed l'età dell' oro!

Alas! the loom is still for evermore,
The wild goats browse where once the wheat waved high,
The sand creeps up upon the empty shore,
The forum echoes to the hoot-owl's cry.

Its sounding title of the ages past
Now only reads "ruine mélancolique,"
And all its glistening marble is at last
Ten lines of précis archéologique.

R. M. H.

Ex-Editor

The resignation of JOTHAM JOHNSON from the editorship of *ARCHAEOLOGY* takes effect with the publication of this issue. The present expectation is that the editorial work will be divided among three active editors, a senior editor and two associates. Locum tenentes for the as yet undesignated editor-in-chief, are ROBERT L. ALEXANDER and MARGARET A. ALEXANDER, of New York University's Institute of Fine Arts.

Dr. JOHNSON, who has been editor of *ARCHAEOLOGY* since the publication of the first number, expects still to have his hands full as chairman of the department of classics at Washington Square College and classics adviser in the Graduate School of Arts and Science, New York University. He has also undertaken to continue editing the *ARCHAEOLOGICAL NEWSLETTER* through 1952.

brought this change in his viewpoint has recently been published by the Smithsonian Institution.

The original Kensington stone was on exhibition at the U. S. National Museum in Washington from February 17, 1948, to February 25, 1949, when it was returned to the Alexandria, Minnesota, Chamber of Commerce. The Smithsonian Institution has taken no position with regard to its authenticity, but felt that its presence in Washington would provide runic scholars a further opportunity to study it. A full-size replica is now on special exhibition in the National Museum.

The Snows of Yesteryear

On October 1st the Chicago Natural History Museum formally opened a new hall—named Frederick J. V. Skiff Hall in honor of the first director of the museum (1893-1921). It answers such questions as the famous one posed by FRANÇOIS VILLON, "Where are the snows of yesteryear?"—and such other questions as: "What part of the world was covered with ice a few thousand years ago?" "What living things ruled the world a few million years ago?"

A long panorama of over a billion years of earth history is set forth in a series of entirely new exhibits, emphasizing the last 540 million years, the time during which the earth has been inhabited by living creatures.

The snows that fell in Wisconsin a few hundred years ago are now being pumped from deep wells beneath Chicago, as water for industrial use. A diagram shows that the water has slowly worked its way through beds of underground porous rock. The area of the great ice sheet of about 25,000 years ago is shown as a cold icy-looking layer of plastic, covering part of a world map. Ancient animals and plants from the ages before history are there in abundance. Many are in the form of accurate life-sized models shown in natural surroundings, but more are shown as actual fossils, from Chicago's quarries, Illinois' coal fields, and hundreds of more distant places in the United States and elsewhere.

An outstanding feature is a series of ten habitat groups restoring the weird creatures of eons ago. The restorations show these animals as they appeared in life amid reproductions

of their various natural environments.

The natural groups of animals and plants are arranged in systematic sequence beginning with the protozoans and sponges, and a case showing how foraminifera, tiny fossil protozoans, are important in oil-well drilling. In other cases are the groups of plants that have left a significant fossil record, beginning with a case showing the relation of fossil plants to coal, and ending with a "family tree" illustrating the relationship and classification of plants.

Entering the hall from the east, the visitor sees first a group of introductory exhibits. People who collect their own fossils will find a map showing the distribution of bedrock of various ages in the Chicago area, with examples of fossils found within 50 miles of the Loop. Another case shows what fossils are, and a collection of objects that look like fossils but are really something else.

Outstanding features of the new hall are spaciousness both in the arrangement of cases and of exhibits in them, tasteful use of color, and clarity in presentation of subject matter, with emphasis on dioramas.

THE MEDIAEVAL ACADEMY OF AMERICA

was founded in Boston in 1925 and incorporated under the laws of the Commonwealth of Massachusetts "to conduct, encourage, promote and support research, publication, and instruction in mediaeval records, literature, languages, arts, archaeology, history, philosophy, science, life and all other aspects of mediaeval civilization by publications, by research, and by such other means as may be desirable, and to hold property for such purpose." Membership in the Academy is open to all persons interested in mediaeval studies.

SPECULUM, published quarterly since 1926 by the Mediaeval Academy of America, presents articles and reviews concerned with mediaeval architecture, armor, fine arts, geography, heraldry, law, literature, music, numismatics, philosophy, science, and social and economic institutions of the Middle Ages.

THE MEDIAEVAL ACADEMY OF AMERICA

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BRIEF NOTICES OF RECENT BOOKS

Classical Myths in Sculpture, by WALTER RAYMOND AGARD. xiv, 203 pages, 97 ill. University of Wisconsin Press, Madison 1951 \$5.00

Professor AGARD has performed a most useful function. Addressing himself to the lay reader, he has clearly and entertainingly traced the use of Greek and Roman mythological themes and figures in sculpture down to the present day. Two opening chapters set the scene by surveying the general influence of classical mythology on sculpture and by describing the various Greek and Roman gods and the treatment they were given in ancient sculpture. Then follow short chapters dealing with mediaeval sculpture, the renaissance, the baroque period, French classicism, the neo-classic period, the modern period in Europe, the modern period in England and America, and a final chapter, the longest in the book, devoted to recent trends.

Since the book aims to be no more than a rapid survey, each chapter has

been given a full critical bibliography to aid those who may want to go further. The illustrations are all from photographs, many of which were gathered by the author and have never been published before. All are of high quality and some are spectacularly good. The book itself is a thing of beauty. The paper is of excellent quality, the text is printed in large, clear type and surrounded by spacious margins, and the simple yet handsome cover design well suits the contents.—L. C.

Han Tomb Art of West China. A Collection of First- and Second-Century Reliefs. RICHARD C. RUDOLPH and WEN YU. vi, 67 pages, 100 plates. University of California Press, Berkeley 1951 \$8.50

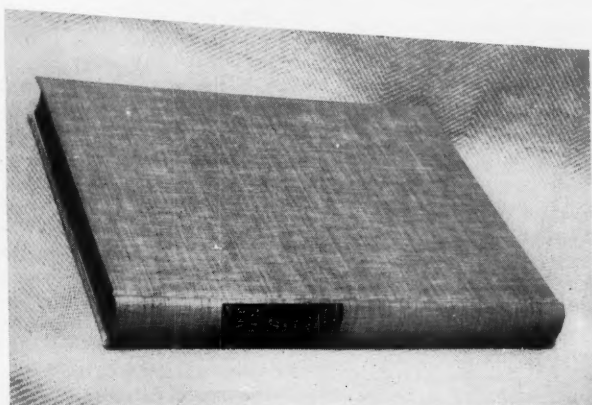
The vitality and variety of Chinese art stands forth on every one of the 100 handsome plates that form the heart of this volume. They provide a series of animal figures and genre scenes executed with amazing taste and charm.

The reliefs come from caves in Szechwan Province and date from the later Han period, 25-220 A. D. Seventy-five are on stone, the rest on bricks and tiles, and most are very well preserved. The authors have provided for each plate a short but complete iconographical description. A concise introduction discusses the provenience of the reliefs and their place in the history of Chinese art.

—L. C.

Le Tombeau de la Chrétienne, by MARCEL CHRISTOFLE. 188 pages, 164 ill., plan. Arts et Métiers Graphiques, Paris 1951

This book will long be the definitive study of the great monument in Algeria known to the Arabs as "the Tomb of the Roman Girl" and to the French as "the Tomb of the Christian Girl". Presumably it is the same monument which Pomponius Mela (I, 6, 38) called *monumentum commune regiae gentis*. It is now thought to be the tomb of Juba II



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(whom Augustus made king of Mauretania), and his wife Cleopatra, daughter by Mark Antony of that unhappy Cleopatra who caused such fear and hatred among the Romans.

For a long time after the French occupation the monument was allowed to remain in the state of disrepair to which time and treasure-seekers had reduced it. Occasional pictures and accounts which CHRISTOFLE regards as most unsatisfactory were published. Few travelers saw it, for one must go west for 60 km. from Algiers along the coast road, then climb a rough track up a steep hill for 3 km. more.

CHRISTOFLE is an architect, and was long in charge of the repair and restoration of the monument. He writes informally and lovingly of his work in a way which the general reader will enjoy. Occasionally he gives some pages of the very technical details which the professional archaeologist likes to have. The literary sources and the accounts of earlier workers are adequately given, and photographs and plans are liberally used to supplement the text.—R. M. H.

Troy. The Human Remains, by J. LAWRENCE ANGEL. 40 pages, 9 tables, 14 plates. Princeton University Press, Princeton 1951 (Supplementary Monograph, 1) \$7.50

The extensive excavations conducted at Troy by the University of Cincinnati are being published in four volumes, of which the first appeared last year and the others are scheduled for early publication. The present monograph is the first of a series of technical studies of the materials found in the excavations. Subsequent ones will deal with the animal bones, the coins, analyses of representational objects of metal, petrographic analyses of the pottery, and perhaps other matters.

Since only one cemetery has been found in or near Troy itself, the human bones available for study are discouragingly few. The report deals with only 28 individuals, 17 from the prehistoric levels and 11 from the historic, most of whom are represented by fragments too broken to measure.

Because of the historical importance of Troy, the author has presented the evidence, meagre as it is, in full. There are summary descriptions of skeletons, photographs and drawings of the best preserved skulls, and tables that com-

pare the findings at Troy with similar evidence from other areas. No hard and fast conclusions can be drawn from such sparse material but the author has put forward a few tentative suggestions. He points out that the Trojan skulls are linked basically with the east, and that connections with the southeast, south and west (Aegean), northwest (Balkans) and north are of progressively less importance. Among the early skulls, Iranian traits are unquestionably present as are traits which connect Troy with the eastern Mediterranean regions. By historic times the Iranian and Mediterranean types seem to be blended, and modified more by Aegean than any other influence. In the Hellenistic-Roman period there is a progressive mixture of Iranian-Mediterranean with Alpine and, finally, in the post-Roman period Armenoid combinations make their appearance.—L.C.

The Pylos Tablets. A Preliminary Transcription, by EMMETT L. BENNETT, JR., with a Foreword by CARL W. BLEGEN. xvi, 117 pages. Princeton University Press, Princeton 1951 \$2.00

In 1939, while conducting trial excavations at Peloponnesian Pylos, BLEGEN and KOUROUNIOTIS came upon several hundred clay tablets and fragments of tablets from the palace archives. Shortly afterwards the newly found treasures became all but inaccessible because of the war and its aftermath, and even BENNETT had no opportunity of checking the photographs (by ALISON FRANTZ and NIKO RESTAKIS) with which he worked against the real objects which, at the time when the present little volume appeared, were still stored away in Athens, pending the reopening of the National Museum. In this sense the book is 'preliminary'; it also lacks the customary epigraphic apparatus which would be required in a complete corpus. Since this could not be done at the moment one must be grateful to BLEGEN and BENNETT for doing precisely what could be done instead of choosing the easy, perfectionist alternative of waiting.

What makes these tablets so important is the fact that they constitute an example—and how sizable an example!—of Minoan writing on the mainland. The script is almost identical with Linear B from Knossos, with only one

sign of fairly frequent occurrence to be added to the list. Apart from numbers and punctuation, the characters are divided into ideograms (always occurring with numerals) and signs combining with one another and having, perhaps, syllabic values. The former furnish the basis for classifying and arranging the tablets: according to the kind of ideogram occurring on a tablet (e.g. the so-called man and woman sign; animal signs; etc.) it is labeled with a capital letter, the seven items which show no ideograms at all forming a separate group by themselves. About 150 small fragments cannot be classified: Within these groups there are subdivisions marked by lower case letters. BENNETT says nothing about them, but it is clear that the well-known difference in the format of the tablets is among the criteria: some tablets (KOBER's palm leaf type) are merely small markers bearing one or two lines extending lengthwise, while others are larger in size and are more page-like. The texts are transcribed and reproduced with incredible neatness. Gaps and doubtful readings are indicated but nothing is restored. On page 82 follows a list of all the characters, including 78 used in sign groups and 63 ideograms, some shapes figuring under both headings. The latter part of the book is taken up by a complete index of sign-groups, that is, presumably, of words. A sign-group has apparently been defined as a sequence, not containing ideograms, bounded by either space, or punctuation, or the beginning or end of a line, although occasionally where there is no such indication group boundary is nevertheless assumed, possibly on the theory that a punctuation mark has become illegible on the tablet. The index also contains a number of suppletions and restorations not given in the text.

BENNETT and BLEGEN (see *ARCHAEOLOGY* 3.249) have no doubt as to the nature of the tablets: they are book-keeping records. But both disclaim any knowledge concerning the meaning of the sign-groups or their pronunciation, i.e. the language recorded on the tablets. It will be recalled in this connection how disinclined ALICE KOBER was to believe that the various bodies of Minoan writing give us one and the same language. BENNETT expresses hope that now, with the texts from

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Pylos published, the combined efforts from various fields will lead to quick decipherment. However this may be, we shall certainly expect the most significant contributions toward an understanding of Minoan writing and pre-Hellenic speech to come from the author of this book.

HENRY M. HOENIGSWALD
University of Pennsylvania

Ancient Near Eastern Texts Relating to the Old Testament, edited by JAMES B. PRITCHARD. 526 pages. Princeton University Press, Princeton 1950 \$15.00

This is a very useful book, soundly conceived, competently edited, and beautifully printed. It offers in translation texts of the most important documents which throw light on the Near East background of the Old Testament. As a source book it will be welcomed not merely by Biblical students, but by all ancient historians who concern themselves with the cultures anterior to those of Greece and Rome. The eleven scholars whom Professor PRITCHARD has called in to translate and annotate are all distinguished experts and the authority which is thus lent to the individual sections is impressive.

All the old favorites are here: Sinuhe, Wenamon, Ptahhotep, the Eloquent Peasant, Ipuwer, Hammurabi and Merneptah. There are copious selections from the Book of the Dead, the Assyrian annals, and the Tell el Amarnah letters. The Akkadian Creation poem, the Gilgamesh epic, the Sargon legend, the Telepinus myth, the treaty of the Silver Tablets (in both Egyptian and Hittite versions), the conspiracy trial of Rameses III, the campaigns of Thothmes III, Amenhotep II, and Rameses II, the Moabite Stone and the Hymn to the Sun as well as Akhnaton's Hymn to Aton, all are here and many another familiar piece.

But there is much more than this. Many documents more recently found and available only in periodical literature now are made accessible: the Lachish letters, the Ugaritic poems about Baal and Anath and the tale of Aghat, the Hittite Song of Ullikunemis, the Sumerian epics dealing with Gilgamesh and the myth of Enki and Ninhursag, and the laws of Eshnunna. Many are so meticulously edited as to present practically new, or at least

greatly improved texts: the Hittite rituals, the Lamentation over the Destruction of Ur, the historiographical documents from Babylon, and the Sumerian dispute between shepherd god and farmer god.

The format is generous and the two-columned page results in a book really of more than a thousand pages. The great amount of material which it has thus been made possible to print is divided not by country or culture but by literary type: myths, epics and legends, legal texts, historical texts, rituals, incantations and descriptions of festivals, hymns and prayers, didactic and wisdom literature, lamentations, secular songs and poems, letters, and miscellaneous. There are disadvantages (particularly to the historian) as well as advantages to this scheme, but these are mitigated by an index of the contents listed by language. Editor, translators and press are all to be congratulated on a superb book.—C. J. K., JR.

Die Kabiren, by BENGT HEMBERG. 420 pages. Almqvist and Wiksells, Uppsala 1950

The *Kabeiroi*, or "Great Gods" or "Samothracian Gods" as they were also called by the ancients, are a group of rather mysterious divinities. They belong to the lesser ranks of Greek gods, along with nymphs, satyrs, pygmies, and the like, and are found in various places in the Greek world at all times, from the very earliest to the latest periods of Greek religion. The present book will unquestionably remain the last word on these deities for many years. BENGT HEMBERG has collected every scrap of information about them that ancient writings, inscriptions and archaeological remains have yielded up, he has listed and discussed all modern scholarship on the subject and he has presented rich parallels from Norse, German, and modern Greek folklore. Six special appendices take up in particular detail individual problems, such as the names of the Gods of Samothrace (the best known locale of the *Kabeiroi*), the names of the heroes of Samothrace, the etymology of the word *Kabeiroi*, etc. Four maps show the geographical distribution of the worship of the various divinities. The book is a very model of complete and careful scholarship.

One of HEMBERG's basic points is that the name "*Kabeiroi*" does not refer to a distinct group of gods. The divinities actually worshipped under this appellation, as under the related names "Great Gods," "Dioscuri," "Samothracian Gods," varied according to place and time and the heart of the problem is to discover the precise nature of the gods worshipped in each locality at particular times. Thus the fact that "*Kabeiroi*" itself is probably a word of Semitic origin is of only incidental importance. The deities show some Semitic characteristics to be sure, but these are minor. The name was borrowed, probably after the Mycenaean Age and certainly before 500 B. C., to be applied to native deities already well established.—L. C.

Ceramique punique, by PIERRE CINTAS. Publications de l'Institut des Hautes Etudes de Tunis, Vol. III. Librairie C. Klincksieck, Paris 1950

M. CINTAS has attempted a complete treatment of Punic pottery, even though he makes it plain that he has published earlier than he would have liked so as to get his work into the hands of scholars renewing their activity after World War II. He has first pursued the basic method of attempting to achieve complete mastery of the materials, their changes of style, and their relation to materials found elsewhere. In addition he has attempted to work out new scientific techniques by which the nature of a given piece of pottery may be described more precisely than has heretofore been possible. He himself did an interesting study of the specific gravity and the power to absorb water of many pieces. At his instigation certain French scientists did microscopic, spectrographic, and even magnetic studies with interesting results. The author expresses a hope that the new techniques of natural science may be increasingly used to make archaeological work more exact. In conclusion he attempts to put all his work to use in tracing the earliest history of Carthage and of those migrations in the Mediterranean which have some connection with Carthaginian history.

Detailed and difficult as it is, this is yet a vigorous and interesting book for a reader who himself has the corresponding vigor to push through it.

—R. M. H.

NEW BOOKS

Selected at the editorial offices from various sources, including bibliographical publications, publishers' announcements, and books received. Prices have not been confirmed.

ALIMEN, H. Atlas de préhistoire. Volume 1. 228 pages, ill., maps, plates. Boubée, Paris 1951 750 fr.

BALBOT, L., and L. CABOT BRIGGS. Travaux du laboratoire d'anthropologie et d'archéologie préhistorique du Musée du Bardo, III-IV. Mechta-el-Arbi. 131 pages, 20 plates, map. Gouvernement Général de l'Algérie, Alger 1951

BEAZLEY, SIR JOHN DAVIDSON. The Development of Attic Black-figure. 190 pages. University of California Press, Berkeley 1951 \$6.50

BERTHIER, A., F. LOGEART, and M. MARTIN. Les vestiges du christianisme antique dans la Numidie centrale. 235 pages, 30 plates, plans. Office des edit. univ., Paris 1951

BLEGEN, CARL, JOHN L. CASKEY, and MARION RAWSON. Troy. The Third, Fourth and Fifth Settlements. Volume II, Parts 1 and 2. Part 1: xxii, 325 pages. Part 2: xxiii pages, 318 plates and diagrams. Princeton University Press, Princeton 1951 \$36.00

BOSSERT, HELMUTH. Die ältesten Kulturen d. Mittelmeerkreises. Bd. 3: Alttyrien. Kunst u. Handwerk in Cypern, Syrien, Palästina, Transjordanien u. Arabien v.d. Antängen bis zum völligen Ausgehen in d. griech.-röm. Kultur. Unter Mitarb. v. RUDOLF NAUMANN. xvi, 128 pages, 407 pages of illustrations, 128 pages of maps and charts. Wasmuth, Tübingen 1951 30 M.

BRIGGS, LAWRENCE PALMER. The Ancient Khmer Empire. 295 pages, ill., maps, diags. American Philosophical Society, Philadelphia 1951 \$5.00

Annual of the British School at Athens, 1951. No. 46. Papers Presented to Professor ALAN WACE to Commemorate Fifty Years of Work in Archaeology. vii, 252 pages, 25 plates, tables. British School at Athens, London 1951 63s.

BROWN, THEODORE BURTON. Excavations in Azarbaijan, 1948. xvi, 279 pages, 43 ill., 17 plates, map, plan, tables. J. Murray, London 1951 84s.

BUCK, ADRIAAN DE. The Egyptian Coffin Texts. Texts of Spells 268-354. 427 pages. University of Chicago Press, Chicago 1951 \$10.00

BUSHNELL, G. H. S. The Archaeology of the Santa Elena Peninsula in South-West Ecuador. 168 pages, ill., maps, diags. Cambridge University Press, New York 1951 \$7.50

Cahiers archéologiques, fin de l'antiquité et moyen âge, fasc. 5. 108 reproductions, 46 figures and plans. Van Oest, Paris 1951 2000 fr.

COCHÉ DE LA FERTE, E. Essai de classification de la céramique mycénienne d'Enkomi (campagne 1946-1947). 66 pages. Geuthner, Paris 1951 1000 fr.

COTTRELL, LEONARD. The Lost Pharaohs. The Romance of Egyptian Archaeology. 256 pages, 51 plates. Philosophical Library, New York 1951 \$6.00

CRAWFORD, O. G. S. The Fung Kingdom of Sennar, with a Geographical Account of the Middle Nile Region. xxi, 359 pages, 38 plates, 25 figures in text. John Bellows, Gloucester 1951 2£ 15s.

FIECHTER, ERNST ROBERT. Das Dionysus Theater in Athen. 4. Nachtr.: Das Theater im Piraieus. Das Theater auf Thera. 56 pages, 7 plates, ill. Kohlhammer, Stuttgart 1950 9 M.

Deutsches archäologisches Institut. Forschungen auf Kreta, 1942. Hrsg. v. FRIEDRICH MATZ. 166 pages, 122 pages of ill. de Gruyter, Berlin 1951 80 M.

DRACK, WALTER. Die romische Wandmalerei der Schweiz. 139 pages, 44 pages of ill. Birkhauser, Basle 1950 36 Swiss fr.

Ferronneries anciennes du Maroc. 46 plates. Editions de la Cigogne, Paris 1951 6325 fr.

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FRANKFORT, HENRI. The Birth of Civilization in the Near East. 116 pages, plates. Williams and Norgate, London 1951 16s.

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